PB80-185630

Research, Demonstration, Training, and Fellowship Awards, October-March Fiscal Year 1979

(U.S.) Environmental Protection Agency
Washington, DC

1979

U.S. Department of Commerce
National Technical Information Service
NTIS

United States
Environmental Protection
Agency

Grants Administration
Division (PM-216)
Washington, DC 20460

EPA-GAD/1-79-01
October - March FY1979

PB80-185630

EPA

Research, Demonstration, Training, and Fellowship Awards

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SOURCES OF INFORMATION ON EPA GRANTS AWARDED, REPORTS GENERATED BY GRANTS AND OTHER GRANT RELATED MATERIALS

Research, Demonstration, Training, and Fellowship Awards

Section I lists research, demonstration, training, and fellowship awards by State, program, and grantee name. Each record provides applicant name, municipality, program element, title, project director, grant identification number, type of grant award, date and dollar amount of award. Section II contains brief project descriptions for research and demonstration projects administered by Headquarters and is arranged in ascending order by the grant identification number. An index is provided for cross-referencing the information between Sections I and II.

1st Half of FY 1977 (October 1976 - March 1977)
EPA-GAD/ 1-78-01, NTIS Number PB278942, price $7.25

2nd Half of FY 1977 (April 1977 - September 1977)
EPA-GAD/ 1-78-02, NTIS Number PB283959, price $21.50

1st Half of FY 1978 (October 1977 - March 1978)
EPA-GAD/ 1-78-03, NTIS Number PB289857, price $9.00

2nd Half of FY 1978 (April - September 1978)
EPA-GAD/ 1-78-02

State and Local Grant Awards

Lists all State and Local Assistance Awards by State, by program, and by grantee name. Format the same as for Research, Demonstration, Training and Fellowship Awards listed above.

1st Half of FY 1977 (Octover 1976 - March 1977)
EPA-GAD/ 2-78-01, NTIS Number PB279888 price $11.75

2nd Half of FY 1977 (April 1977 - September 1977)
EPA-GAD/ 2-78-02, NTIS Number PB282687, price $15.25

1st Half of FY 1978 (October 1977 - March 1978)
EPA-GAD/ 2-78-03, NTIS Number and price to be assigned.

2nd Half of FY 1978 (April - September 1978)
EPA-GAD/ 2-79-01

1st Half of FY 1979 (October 1978 - March 1979)
EPA-GAD/ 2-79-02

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Awards Register, Grants Assistance Programs of EPA

Volume I. Section I lists research, demonstration, training and fellowship awards by State, program, and grantee name. Each record provides applicant name, municipality, program element, title, project director, Grant Identification Number, type of grant award, date and dollar amount of award. Section II contains brief project descriptions for research and demonstration projects administered by Headquarters and is arranged in ascending order by the Grant Identification Number. An index is provided for cross-referencing the information between Sections I and II. Section III is a cross-walk for use in identifying the program/subprogram area of a grant in accordance with classifications of our Office of Research and Development.

1st Half of FY 1976 (July 1975 - December 1975)
EPA-GAD/1-76-001, NTIS Number PB252893, price $5.25

2nd Half of FY 1976 (January 1976 - June 1976)
EPA-GAD/1-76-003, NTIS Number PB260742, price $9.00

Transition Quarter of FY 1976 (July 1976 - September 1976)
EPA-GAD/1-76-005, NTIS Number PB275407/AS, price $8.00

1st Half of FY 1975 (July 1974 - December 1974)
EPA-GAD/1-75-001, NTIS Number PB241476, price $5.25, Microfiche, $3.00

2nd Half of FY 1975 (January 1975 - June 1975)
EPA-GAD/1-75-003, NTIS Number PB245575, price $10.75, Microfiche $3.00

Volume II. Lists all State and Local Assistance Awards by State, by program, and by grantee name. Contents and format the same as for Volume I, Section I.

1st Half of FY 1976 (July 1975 - December 1975)
EPA-GAD/1-76-002, NTIS Number PB253091, price $11.00

2nd Half of FY 1976 (January 1976 - June 1976)
EPA-GAD/1-76-004, NTIS Number PB261980, price $11.00

Transition Quarter of FY 1976 (July 1976 - September 1976)
EPA-GAD/1-76-006, NTIS Number PB275408/AS, Price $9.00

Awards Register; Volume II, Continued

1st Half of FY 1975 (July 1974 - December 1974)
EPA-GAD/1-75-002, NTIS Number PB241400, price $9.00, Microfiche, $3.00.

2nd Half of FY 1975 (January 1975 - June 1975)
EPA-GAD/1-75-004, NTIS Number PB245576, price $11.75, Microfiche, $3.00.

Awards Register, Grants Assistance Programs of EPA
Fiscal Year 1974 (July 1973 - June 1974)

Volume I. Lists all awards in Fiscal Year 1974 except Waste Water Treatment Construction and Waste Water Treatment Reimbursement Awards. NTIS N-mber PB238370, price $8.00, microfiche, $3.00.

Volume II. Lists only Waste Water Treatment Construction Awards in Fiscal Year 1974. NTIS Number PB238371, price $9.25, microfiche, $3.00.

Volume III. Lists only Waste Water Treatment Reimbursement Awards in Fiscal Year 1974. NTIS Number PB238372, price $9.00, microfiche, $3.00.

Awards Register, Grants Assistance Programs of EPA
Fiscal Year 1973 (July 1972 - June 1973)

The format of this publication has the initial sort by State. Each entry includes grantee identification, program area, grant title, grant number, award date, and dollar amount. Environmental Protection Agency 220/1-73-004, NTIS Number PB229827, price $15.25, microfiche $3.00.

The above publications can be purchased from:

National Technical Information Service (NTIS)
Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161
(703) 557-4650

Awards Register, Grants Assistance Programs of EPA
Fiscal Year 1972 (July 1971 - June 1972)

This publication is currently out of print. It is available for reference at all EPA libraries and at EPA Headquarters, Grants Administration Division, 401 M Street SW, Washington, D.C.

FEDERAL ASSISTANCE PROGRAMS OF THE ENVIRONMENTAL PROTECTION AGENCY

This publication includes descriptive information about Environmental Protection Agency assistance programs reprinted from the Catalog of Federal Domestic Assistance, which was prepared for the Office of Management and Budget. Similar information on programs of all Federal agencies is included in the Catalog which is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20420 for $18.00 and includes changes as issued. It is also available for public use in Federal Depository Libraries.

Copies of this publication may be obtained from the Environmental Protection Agency, Grants Operations Branch, Grants Administration Division (PM-216), Office of Planning and Management, Washington, D.C. 20460.

NOTE: All of the preceeding publications are available for examination at the Grants Administration Division and Library of EPA Headquarters and each Regional office.

OTHER GRANT-RELATED INFORMATION

A brief summary of a grant project is available on the majority of research and demonstration grants.

These summaries are available for projects that have received Federal funding. In rare instances, a grant application may contain privileged information and is so designated. For these, only the award data, such as grant number, applicant name, organization, location, grant title, amount awarded, and award date is available. Other information may be available depending on the particular circumstances.

The Smithsonian Science Information Exchange (SSIE), room 300, 1730 M Street, N.W., Washington, D.C. 20036, receives a copy of the summary of a grant and makes it available to the public on a fee basis. The cost of a print-out, if the Agency is identified and the grant or contract number is provided, costs $2.00 per grant number with a $10.00 minimum fee. A search on a subject (topic) is $60.00 per search service for 1 to 50 titles, and an additional charge of 25¢ per title. A search on the investigator's name can also be performed. All inquiries and requests for this service should be addressed to SSIE or phone (202) 381-4211.

REPORTS GENERATED BY GRANT SUPPORTED PROJECTS

Final reports and other program reports generated by grant supported projects are published and made available if merited. Final report information is available from the following program offices:

For solid waste management and resource recovery:

Publication and Distribution Unit
Office of Solid W ste Management
Environmental Protection Agency
Cincinnati, Ohio 45268

For air pollution control:

Library MD-35
Environmental Protection Agency
Research Triangle Park, North Carolina 27711

For pesticide publications:

Information Section WH-569
Office of Pesticide Programs
Environmental Protection Agency
401 M Street SW
Washington, D.C. 20460

For other research and demonstration projects:

Technology Transfer Staff
Office of Research and Development
Environmental Protection Agency
Cincinnati, Ohio 45268

EPA REPORTS BIBLIOGRAPHY QUARTERLY SUPPLEMENT

(sponsored by Library Systems Branch)

The EPA Cumulative Bibliography 1970-1976 published in December 1976 (NTIS Number PB265920, price quite obtained from NTIS) contains a bibliographic citation with abstracts for reports generated by EPA and its predecessor agencies and entered into the NTIS collection through 1976. Access points to this information are by Report Title; Subject (keyword); Corporate or Personal Author; Contract Number; and Accession/Report Number.

Beginning in March 1977, quarterly update supplements will be published listing and indexing EPA technical reports and journal articles entered into the NTIS collection during the preceding quarter. An additional index titled "Sponsoring EPA Office" is included as well. The fourth quarterly issue will cumulate and become the annual index for the year.

To order documents or subscriptions, contact the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161. Do not order from the U.S. Environmental Protection Agency. If what you have ordered is in stock on hand, you should receive your order within two weeks after it arrives at NTIS. If what you have ordered must be reproduced from a microform, or if all the paper copies have been sold and reprints are in process, you should receive your order within four to six weeks. Infrequently, orders may be further delayed by a contractor's inability to deliver to NTIS. You will be notified if such a delay is expected.

The EPA Reports Bibliography Quarterly Supplement series is available on annual subscription from NTIS at a cost of $45.00 for North American Continent users (single copies, when available, are $12.50 each). For those outside the North American Continent, please write NTIS for prices.

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The following EPA libraries maintain for reference purposes completed sets of EPA reports on microfiche.

Region I Library
Room 2211-B, JFK Federal Bldg.
Boston, Massachusetts 02203

National Marine Water Quality Lab
P. O. Box 277
West Kingston, Rhode Island 02892

Region II Library
26 Federal Plaza
New York, New York 10007

Region II Field Office Library
Edison, New Jersey 08817

Region III Library
Curtis Bldg., 6th & Walnut Streets
Philadelphia, Pennsylvania 19106

Headquarters Library, Room 2404 WSM
401 M Street, S.W.
Washington, D.C. 20460

Region IV Library
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Library Services MD-35
Research Triangle Park
North Carolina 27711

Southeast Environmental Research Lab
College Station Road
Athens, Georgia 30601

Gulf Breeze Laboratory
Sabine Island, Bldg. 29
Gulf Breeze, Florida 32561

Region V Library
230 Dearborn Street, Rm. 1455-A
Chicago, Illinois 60604

Environmental Research Center Library
26 West St. Clair Street
Cincinnati, Ohio 45268

Environmental Research Lab-Duluth
6201 Congdon Boulevard
Duluth, Minnesota 55804

Region VI Library
First International Bldg.
1201 Elm Street
Dallas, Texas 75270

Robert S. Kerr Environmental Research Laboratory
P. O. Box 1198
Ada, Oklahoma 74820

Region VII Library
1735 Baltimore Avenue, Room 249
Kansas City, Missouri 64108

Region VIII Library, 8M-ASL
1860 Lincoln Street
Denver, Colorado 80203

National Field Investigation Center
Room A-1209, Bldg. 53
Box 25227, Denver Federal Center
Denver, Colorado 80225

Region IX Library
100 California Street
San Francisco, California 94111

National Environmental Research Center
P. O. Box 15027
Las Vegas, Nevada 89114

Region X Library
1200 Sixth Avenue
Seattle, Washington 98101

National Environmental Research Center
200 S.W. 35th Street
Corvallis, Oregon 97330

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GRANT NUMBER	STATE	PROGRAM	APPLICANT
802309-01C	MN	DEMONSTRATION	ELY, CITY OF
802511-035	PA	RESEARCH	DREXEL UNIV.
803157-018	IL	RESEARCH	AMERICAN PUBLIC WORKS ASSOC.
803643-032	OH	RESEARCH	CINCINNATI, UNIV. OF
803651-029	PA	RESEARCH	PENNSYLVANIA STATE UNIV.
803774-031	NY	RESEARCH	SYRACUSE UNIV.
803851-035	MN	RESEARCH	MINNESOTA, UNIV. OF
803856-031	NC	RESEARCH	DUKE UNIV.
803887-031	FL	RESEARCH	FLORIDA STATE UNIV.
803896-024	MO	RESEARCH	WASHINGTON UNIV.
803903-031	IA	RESEARCH	AMES, CITY OF
803929-020	SC	RESEARCH	SOUTH CAROLINA DEPT. OF HEALTH & ENVRN
803931-024	CO	RESEARCH	BOULDER, CITY OF
803950-034	CO	RESEARCH	COLORADO STATE UNIV.
803983-032	HI	RESEARCH	HAWAII, UNIV. OF
804235-015	WI	DEMONSTRATION	WISCONSIN DEPT. OF NATURAL RESOURCES
804238-015	WI	DEMONSTRATION	WISCONSIN DEPT. OF NATURAL RESOURCES
804256-022	OH	RESEARCH	AKRON, UNIV. OF
804260-013	MN	DEMONSTRATION	MINNEAPOLIS, CITY OF
804323-030	OK	RESEARCH	LANGSTON UNIV.
804329-017	NC	RESEARCH	AMERICAN TEXTILE MANUFACTURERS INST.
804345-040	CA	RESEARCH	CALIFORNIA, UNIV. OF
804370-014	FC	RESEARCH	CENTRE NUCLEAIRES DE FONTENSAY AUX ROS
804431-032	CA	RESEARCH	STANFORD UNIV.
804440-022	GA	RESEARCH	ATLANTA UNIV.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
804444-040	MO	RESEARCH	MISSOURI, UNIV. OF
804474-030	TX	RESEARCH	TEXAS, UNIV. OF
804513-031	NY	RESEARCH	BOYCE THOMPSON INST.
804533-030	IA	RESEARCH	IOWA STATE UNIV.
804554-015	MA	RESEARCH	ARTHUR D. LITTLE, INC.
804568-023	KY	RESEARCH	KENTUCKY, UNIV. OF
804570-031	FL	RESEARCH	FLORIDA, UNIV. OF
804585-020	NE	RESEARCH	CREIGHTON UNIV.
804609-022	NY	RESEARCH	SYRACUSE RES. CORP.
804610-020	CA	RESEARCH	PACIFIC, UNIV. OF
804617-010	UT	RESEARCH	UTAH STATE DIVISION OF HEALTH
804621-024	TX	RESEARCH	TEXAS, UNIV. OF
804622-030	OR	RESEARCH	OREGON STATE UNIV.
804647-023	LA	RESEARCH	NEW ORLEANS, UNIV. OF
804719-021	CO	RESEARCH	COLORADO STATE UNIV.
804743-021	NY	RESEARCH	NEW YORK STATE HLTH RES.
804750-023	OR	RESEARCH	OREGON GRAD. CTR. FOR STUDY & RES.
804763-016	PA	RESEARCH	DREXEL UNIV.
804764-030	OR	RESEARCH	PORTLAND STATE UNIV.
804770-012	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804776-022	NY	RESEARCH	ASSOCIATED UNIVERSITIES, INC.
804802-012	WI	RESEARCH	WISCONSIN, UNIV. OF
804812-012	MA	DEMONSTRATION	BOSTON METRO. DIST. COMM.
804813-030	NY	RESEARCH	SYRACUSE RES. CORP.
804815-016	FL	DEMONSTRATION	FLORIDA DEPT. OF ENVRN. REGULATION
804834-030	MI	RESEARCH	MICHIGAN, UNIV. OF

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GRANT NUMBER	STATE	PROGRAM	APPLICANT
804847-025	OK	RESEARCH	OKLAHOMA STATE UNIV.
804880-012	NJ	RESEARCH	NORTHWEST BERGEN CNTY. SEWER AUTH.
804885-030	TN	RESEARCH	VANDERBILT UNIV.
804900-014	NY	RESEARCH	CORNELL UNIV.
804906-013	NY	DEMONSTRATION	NEW YORK STATE DEPT. OF ENVRN. CONSERV
804908-013	NY	DEMONSTRATION	NEW YORK STATE DEPT. OF ENVRN. CONSERV
804916-030	FL	RESEARCH	FLORIDA STATE UNIV.
804920-030	WI	RESEARCH	WISCONSIN, UNIV. OF
804944-014	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804946-020	MA	RESEARCH	MARLBOROUGH, CITY OF
804959-023	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804971-013	CA	RESEARCH	HYDROCOMP, INC.
804974-021	LA	RESEARCH	SOUTHERN UNIV.
805006-012	MO	RESEARCH	ST. LOUIS UNIV.
805027-011	PA	RESEARCH	CARNEGIE-MELLON UNIV.
805039-013	MO	RESEARCH	MISSOURI, UNIV. OF
805049-020	IL	RESEARCH	IIT RESEARCH INST.
805067-020	DC	RESEARCH	NATIONAL ACADEMY OF SCIENCES
805067-021	DC	RESEARCH	NATIONAL ACADEMY OF SCIENCES
805091-030	MA	RESEARCH	HARVARD UNIV.
805095-013	OH	RESEARCH	BATTELLE MEMORIAL INST.
805107-011	LA	RESEARCH	TULANE UNIV.
805141-020	IL	RESEARCH	IIT RESEARCH INST.
805146-030	MI	RESEARCH	MICHIGAN, UNIV. OF
805170-014	RI	RESEARCH	RAYTHEON CO.
805189-012	OH	DEMONSTRATION	FARM BUREAU DEVELOPMENT CORP.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805207-011	FL	RESEARCH	CHARLOTTE HARBOR WATER ASSOC, INC.
805222-021	NY	RESEARCH	DUDLEY OBSERVATORY
805226-012	ID	RESEARCH	MORGAN, RANDALL
805237-020	SC	RESEARCH	BENEDICT COLLEGE
805253-020	MS	RESEARCH	MISSISSIPPI STATE UNIV.
805274-012	VA	RESEARCH	VIRGINIA POLY. INST. & STATE UNIV.
805279-012	CA	RESEARCH	MOULTON NIGUEL WATER DIST.
805298-021	PA	RESEARCH	PITTSBURGH, UNIV. OF
805305-011	GA	RESEARCH	GEORGIA, UNIV. OF
805317-020	IL	RESEARCH	IIT RESEARCH INST.
805320-021	CO	RESEARCH	COLORADO STATE UNIV.
805333-012	MI	RESEARCH	MICHIGAN, UNIV. OF
805337-020	OH	RESEARCH	OHIO STATE UNIV. RES. FDN.
805343-021	WA	RESEARCH	WASHINGTON STATE UNIV.
805365-013	CA	RESEARCH	OXNARD, CITY OF
805371-012	NH	RESEARCH	MANCHESTER, CITY OF
805379-015	CA	RESEARCH	CALIFORNIA, UNIV. OF
805406-011	MA	RESEARCH	LOWELL, UNIV. OF
805410-021	CA	RESEARCH	CALIFORNIA, UNIV. OF
805427-020	AZ	RESEARCH	ARIZONA, UNIV. OF
805431-030	IL	RESEARCH	ILLINOIS, UNIV. MEDICAL CTR.
805445-013	OH	RESEARCH	CINCINNATI, CITY OF
805456-020	AL	RESEARCH	ALABAMA A&M UNIV.
805460-020	NC	RESEARCH	DUKE UNIV.
805472-020	TX	RESEARCH	NORTH TEXAS STATE UNIV.
805477-021	RI	RESEARCH	RHODE ISLAND, UNIV. OF

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GRANT NUMBER	STATE	PROGRAM	APPLICANT
805540-012	MA	RESEARCH	MASSACHUSETTS GEN. HOSPITAL
805569-020	KY	RESEARCH	LOUISVILLE, UNIV. OF
805579-011	MO	RESEARCH	UNIVERSITY OF MISSOURI
805581-020	CA	RESEARCH	OCCIDENTAL COLLEGE
805585-020	WV	RESEARCH	WEST VIRGINIA UNIV.
805587-020	IL	RESEARCH	ILLINOIS, UNIV. OF
805588-018	IL	RESEARCH	ILLINOIS, UNIV. OF
805589-020	OH	RESEARCH	OHIO STATE UNIV.
805590-020	KY	RESEARCH	KENTUCKY RES. FDN. UNIV. OF
805603-020	OH	RESEARCH	OHIO STATE UNIV.
805608-020	PA	RESEARCH	PITTSBURGH, UNIV. OF
805609-020	IN	RESEARCH	INDIANA UNIV. FDN.
805610-020	MT	RESEARCH	MONTANA, UNIV. OF
805612-020	MA	RESEARCH	MASSACHUSETTS, UNIV. OF
805620-013	VA	RESEARCH	MITRE CORP.
805620-014	VA	RESEARCH	MITRE CORP.
805621-011	MI	RESEARCH	CHICAGO, CITY OF
805628-020	IL	RESEARCH	ILLINOIS, UNIV. OF
805635-013	AZ	RESEARCH	ARIZONA, UNIV. OF
805640-020	PA	RESEARCH	PENNSYLVANIA STATE UNIV.
805659-020	PA	RESEARCH	PENNSYLVANIA STATE UNIV.
805661-014	AK	RESEARCH	WAINWRIGHT, CITY OF
805664-011	FL	RESEARCH	FLORIDA, UNIV. OF
805678-010	MN	RESEARCH	MINNESOTA, UNIV. OF
805706-020	NY	RESEARCH	AMERICAN NATIONAL STANDARDS INST.
805716-020	OH	RESEARCH	CASE WESTERN RESERVE UNIV.

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GRANT NUMBER	STATE	PROGRAM	APPLICANT
805716-021	OH	RESEARCH	CASE WESTERN RESERVE UNIV.
805726-020	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
805733-020	CO	RESEARCH	DENVER, UNIV. OF
805738-011	PA	RESEARCH	PENNSYLVANIA STATE UNIV.
805739-020	NC	RESEARCH	NORTH CAROLINA STATE UNIV.
805754-020	PA	RESEARCH	PITTSBURGH, UNIV. OF
805758-020	OH	RESEARCH	CINCINNATI, UNIV. OF
805769-010	WI	DEMONSTRATION	WISCONSIN DEPT. OF NATURAL RESOURCES
805788-012	CA	RESEARCH	JOHN MUIR INST. FOR ENVRN. STUDIES
805803-011	CA	RESEARCH	CALIFORNIA, UNIV. OF
805846-011	WA	RESEARCH	FRED HUTCHINSON CANCER RES.
805913-011	NY	RESEARCH	NEW YORK HEALTH RES., INC.
805918-012	MO	RESEARCH	WASHINGTON UNIV.
805918-013	MO	RESEARCH	WASHINGTON UNIV.
805927-011	CA	RESEARCH	BAY AREA GOVTS., ASSN. OF
805933-011	TX	RESEARCH	BAYLOR COLLEGE OF MEDICINE
805934-011	NY	RESEARCH	NEW YORK STATE DEPT. OF ENVRN. CONSERV
805943-010	CA	RESEARCH	AEROSPACE CORP.
805947-020	TX	RESEARCH	TEXAS A&M RES. FDN.
806003-011	OR	RESEARCH	CLATSKANIE, CITY OF
806005-013	MO	RESEARCH	WASHINGTON UNIV.
806009-011	ME	RESEARCH	MAINE, UNIV. OF
806030-011	MI	RESEARCH	MICHIGAN, UNIV. OF
806043-010	WA	DEMONSTRATION	KENT, CITY OF
806047-013	MT	RESEARCH	HELENA, CITY OF
806048-011	PA	RESEARCH	PENNSYLVANIA STATE UNIV.

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GRANT NUMBER	STATE	PROGRAM	APPLICANT
806052-011	FL	RESEARCH	DADE CNTY. DEPT. PUB. HLTH.
806056-012	DC	RESEARCH	AMERICAN PETROLEUM INST.
806062-011	IL	RESEARCH	IIT RESEARCH INST.
806070-012	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
806072-011	RI	RESEARCH	RHODE ISLAND, UNIV. OF
806079-010	FL	RESEARCH	FLORIDA, UNIV. OF
806081-011	NY	DEMONSTRATION	ITHACA, CITY OF
806082-012	MT	RESEARCH	NORTHERN CHEYENNE TRIBAL COUNCIL
806083-011	MN	RESEARCH	MINNESOTA, UNIV. OF
806101-010	WA	DEMONSTRATION	TACOMA METRO. PARK DIS.
806102-013	WA	RESEARCH	WASHINGTON, UNIV. OF
806115-011	DC	RESEARCH	NATIONAL ACADEMY OF SCIENCES
806127-011	WA	RESEARCH	WASHINGTON, UNIV. OF
806139-010	MA	RESEARCH	MASSACHUSETTS, UNIV. OF
806149-011	MI	RESEARCH	MICHIGAN, UNIV. OF
806157-011	TX	RESEARCH	NORTH TEXAS STATE UNIV.
806160-011	CA	RESEARCH	RAMONA MUNICIPAL WATER DISTRICT
806167-010	CA	RESEARCH	SOUTHERN CALIFORNIA, UNIV. OF
806173-010	OH	RESEARCH	CHRIST HOSPITAL INST. OF MEDICAL RES.
806193-010	SD	DEMONSTRATION	LAKE CNTY. CONSERV. DIST.
806194-010	TX	RESEARCH	TEXAS, UNIV. OF
806214-011	MI	RESEARCH	MICHIGAN STATE UNIV.
806221-010	MD	RESEARCH	MARYLAND, UNIV. OF
806238-010	TX	RESEARCH	TEXAS, UNIV. OF
806248-010	IN	DEMONSTRATION	INDIANAPOLIS, CONSOLIDATED CITY OF
806251-010	TX	RESEARCH	TEXAS, UNIV OF

GRANT NUMBER	STATE	PROGRAM	APPLICANT
806275-010	MI	RESEARCH	MICHIGAN, UNIV. OF
806278-011	CO	RESEARCH	COLORADO STATE UNIV.
806284-010	KY	RESEARCH	LOUISVILLE, UNIV. OF
806286-010	FL	RESEARCH	FLORIDA, UNIV. OF
806297-010	OR	RESEARCH	OREGON STATE UNIV.
806299-010	NY	RESEARCH	RENSSELAER POLYTECHNIC INST.
806301-010	IA	RESEARCH	IOWA, UNIV. OF
806302-010	OH	RESEARCH	MIAMI UNIV.
806308-010	NV	DEMONSTRATION	WASHOE COUNTY, NEVADA
806322-010	IL	RESEARCH	NORTHBROOK, VILLAGE OF
806326-012	IL	RESEARCH	IIT RESEARCH INST.
806327-011	IL	RESEARCH	IIT RESEARCH INST.
806328-011	WI	RESEARCH	MADISON, CITY OF
806329-010	ME	RESEARCH	NASSON COLLEGE
806335-010	IL	RESEARCH	ILLINOIS, UNIV. OF
806337-010	NC	RESEARCH	DUKE UNIV.
806338-011	TX	RESEARCH	AUSTIN, CITY OF
806355-010	NY	RESEARCH	GLEN COVE, CITY OF (NEW YORK)
806357-011	CA	RESEARCH	BAY AREA GOVTS., ASSN. OF
806359-013	TX	RESEARCH	TEXAS, STATE OF
806365-011	PA	RESEARCH	CARNEGIE-MELLON UNIV.
806372-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806377-010	MN	RESEARCH	MINNESOTA, UNIV. OF
806381-010	NY	RESEARCH	NEW YORK ACADEMY OF SCI
806387-010	WA	RESEARCH	WASHINGTON, UNIV. OF
806391-010	IL	RESEARCH	ILLINOIS, UNIV. OF

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GRANT NUMBER	STATE	PROGRAM	APPLICANT
806403-010	GA	RESEARCH	GEORGIA INST. OF TECH.
806404-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806412-010	MA	RESEARCH	MASSACHUSETTS, UNIV. OF
806413-010	NY	RESEARCH	SYRACUSE RES. CORP.
806414-010	CA	RESEARCH	CALIFORNIA DEPT OF HEALTH SERVICES
806422-010	IL	RESEARCH	WESTERN ILLINOIS UNIV.
806425-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806430-010	GA	RESEARCH	GEORGIA, UNIV. OF
806439-010	PA	RESEARCH	ALLEGHENY COLLEGE
806440-010	FC	RESEARCH	INTERNATIONAL COMM. ON RAD. PROT.
806447-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806448-010	KY	RESEARCH	KENTON CNTY.
806448-011	KY	RESEARCH	KENTON CNTY, KENTUCKY
806449-010	OH	RESEARCH	CINCINNATI, UNIV. OF
806451-010	IN	RESEARCH	PURDUE RES. FDN
806457-010	NV	RESEARCH	DESERT RESEARCH INST.
806459-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806467-010	MO	RESEARCH	MISSOURI, UNIV. OF
806477-010	FL	RESEARCH	HOLLY HILL, CITY OF
806479-010	OH	RESEARCH	OHIO STATE UNIV.
806481-010	VA	RESEARCH	VIRGINIA COMMONWEALTH UNIV.
806483-010	GA	RESEARCH	GEORGIA, UNIV. OF
806489-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806506-010	CA	RESEARCH	SRI INTERNATIONAL
806514-010	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
806525-010	WV	RESEARCH	WEST VIRGINIA UNIV.

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GRANT NUMBER	STATE	PROGRAM	APPLICANT
806526-010	IL	RESEARCH	ILLINOIS, UNIV. OF
806527-010	UT	RESEARCH	UTAH STATE UNIV.
806536-010	CA	RESEARCH	SRI INTERNATIONAL
806539-010	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
806546-010	VT	RESEARCH	VERMONT, UNIV. OF
806548-010	MO	RESEARCH	WASHINGTON UNIV.
806549-010	DC	RESEARCH	SOCIETY FOR OCCUPATIONAL & ENVRNTL
806557-010	OK	RESEARCH	EAST CENTRAL OKLAHOMA STATE UNIV.
806562-010	OK	RESEARCH	OKLAHOMA, UNIV. OF
806565-010	MI	RESEARCH	MICHIGAN, UNIV. OF
806567-010	IL	RESEARCH	AMERICAN PUBLIC WORKS ASSOC.
806591-010	MA	RESEARCH	MASSACHUSETTS, UNIV. OF MEDICAL SCHOOL
806594-010	NY	RESEARCH	AMERICAN LUNG ASSOC.
806598-010	IN	RESEARCH	NOTRE DAME, UNIV. OF
806633-010	OH	RESEARCH	CINCINNATI, UNIV. OF
806666-010	VA	RESEARCH	AMERICAN INSTITUTE OF BIOLOGICAL SCI
806710-010	NY	RESEARCH	FLORIDA A&M UNIV.
806846-010	OH	RESEARCH	WRIGHT STATE UNIV.
806847-010	NE	RESEARCH	NEBRASKA, UNIV. OF
806850-010	HI	RESEARCH	HAWAII, UNIV. OF
806860-010	NY	RESEARCH	AMERICAN-SCANDINAVIAN FDN, THE
806864-011	WI	RESEARCH	WISCONSIN, UNIV. OF
806870-010	FL	RESEARCH	AMERICAN ELECTROPLATERS' SOCIETY, INC.
806872-020	OH	RESEARCH	CINCINNATI, UNIV. OF
806873-010	MI	RESEARCH	MUSKEGON, COUNTY OF (DPW)
806877-040	CO	RESEARCH	COLORADO STATE UNIV.

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

A L A B A M A

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
ALABAMA A&M UNIV. NORMAL	EFFECT OF LIMING, PHOSPHATE & ORGANIC MATTER ON HEAVY METAL AVAILABILITY TO PLANTS GROWN IN SLUDGE	SHUFORD, J.	80545602	CONT	78/12/29	$50,388

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	ALASKA					
** RESEARCH **						
WAINWRIGHT, CITY OF WAINWRIGHT	ALASKA VILLAGE RESEARCH PROJECT	NAYAKIK, C.	80566101	INCR	79/03/01	$40,000

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APPLICANT / MUNICIPALITY	PROJECT DIRECTOR / FELLOW / TITLE	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
ARIZONA					
** RESEARCH **					
ARIZONA, UNIV, OF TUCSON	FREISER, H. ANALYSIS AND CHARACTERIZATION OF ORGANIC CARBON COMPOUNDS IN ATMOSPHERIC PARTICULATE MATTER	80542702	CONT	79/01/15	$55,000
ARIZONA, UNIV, OF TUCSON	RATHJE, W. L. SOLID WASTE REDUCTION AND MASS MEDIA CAMPAIGNS	80563501	INCR	79/03/20	$11,271

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

C A L I F O R N I A

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
AEROSPACE CORP. LOS ANGELES	NATIONAL INVENTORY OF ATMOSPHERIC EMISSIONS FROM STATIONARY SOURCES	DYKEMA, OWEN	80594301	NEW	78/12/29	$76,058
BAY AREA GOVTS., ASSN. OF BERKELEY	STORMWATER POLL. ANALYSIS WITH MAC MODEL IN CONTINUING 208 PLANNING	LITWIN, JORAM	80592701	INCR	79/01/02	$39,124
BAY AREA GOVTS., ASSN. OF BERKELEY	BIOLOGICAL TREATMENT OF STORMWATER RUNOFF BY A MARSH/FLOOD BASIN	DAVIS, JOHN	80635701	INCR	79/01/15	$58,545
CALIFORNIA DEPT OF HEALTH SERVICES SACRAMENTO	VALIDATION OF SAMPLERS FOR INHALED PARTICULATE MATTER	WESOLOWSKI, J.	80641401	NEW	79/01/30	$89,781
CALIFORNIA, UNIV. OF RIVERSIDE	CHEMISTRY AND MODE OF ACTION OF INSECTICIDES	FUKUTO, ROY	80434504	CONT	79/01/22	$119,899
CALIFORNIA, UNIV. OF BERKLEY	ANALYSIS OF NCHS DATA ON NONMELANOMA SKIN CANCER	SCOTT,E	80537901	INCR	79/02/05	$18,340
CALIFORNIA, UNIV. OF RIVERSIDE	IMPACT OF OXIDANT AIR POLLUTANTS ON A WESTERN CONIFEROUS FOREST ECOSYSTEM	TAYLOR, C.	80541002	INCR	79/02/06	$73,888
CALIFORNIA, UNIV. OF SANTA BARBARA	OIL SPILL AND OIL POLLUTION REPORTS & OIL SPILL CONTAINMENT, CLEANUP AND RECOVERY	OFFEN,HENRY	80580301	INCR	79/02/22	$59,000
CALIFORNIA, UNIV. OF LA JOLLA	EFFECTS OF SUSPENDED SEDIMENTS ON THE PENETRATION OF SOLAR RADIATION INTO NATURAL WATERS	SMITH, R.	80637201	NEW	79/02/22	$59,946
CALIFORNIA, UNIV. OF LOS ANGELES	STUDIES IN POLLUTION AEROSOL DYNAMICS	FRIEDLANDER, S.	80640401	NEW	78/12/12	$60,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

C A L I F O R N I A

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
CALIFORNIA, UNIV. OF BERKELEY	SYMPOSIUM ON MODELING OF POLLUTANT TRANSPORT IN RECEIVING WATERS	HUGO B. FISHER	80642501	NEW	79/03/01	$9,906
CALIFORNIA, UNIV. OF RIVERSIDE	IMMUNOCHEMICAL ANALYSIS OF PESTICIDES AND SURFACTANTS	HAMMOCK, B.	80644701	NEW	79/03/05	$56,716
CALIFORNIA, UNIV. OF DAVIS	NATURAL AND ANTHROPOGENIC CONTRIBUTIONS TO FINE PARTICULATE MATTER IN THE WESTERN ENERGY RESOURCE	CAHILL, I.	80645901	NEW	78/12/27	$193,397
CALIFORNIA, UNIV. OF LA JOLLA	PENETRATION OF UV-B INTO NATURAL WATERS AND ITS EFFECTS ON PRIMARY PRODUCTIVITY	SMITH, R.	80648901	NEW	79/01/04	$49,945
HYDROCOMP, INC. PALO ALTO	COMPREHENSIVE PACKING FOR SIMULATION OF WATERSHED HYDROLOGY & WATER QUALITY	JOHANSON, R. C.	80497101	INCR	78/11/17	$11,400
JOHN MUIR INST. FOR ENVRN. STUDIES NAPA	REGIONAL VISIBILITY; THE COLORADO PLATEAU	WALTHER, G.	80578801	INCR	78/10/25	$13,454
MOULTON NIGUEL WATER DIST. LAGUNA	RESEARCH STUDY FOR CONTINUING DOCUMENTATION OF PURIFYING DOMESTIC SEWAGE BY USING AQUATIC PLANTS	O'CONNOR, J.	80527901	INCR	79/03/13	$31,895
OCCIDENTAL COLLEGE LOS ANGELES	SEASONAL CYCLES IN BODY COMPOSITION, ORGAN SYSTEM FUNCTION, AND ENERGETICS OF GRASSLAND BIRDS	MORTON, M.	80558102	CONT	78/10/25	$50,290
OXNARD, CITY OF OXNARD	DEVELOPMENT OF A REMOTELY OPERATED VEHICLE TO CONTROL HAZARDOUS MATERIAL SPILLS	GUSTAFSON, H.	80536501	INCR	79/01/15	$25,675
PACIFIC, UNIV. OF STOCKTON	CO-CARCINOGENIC POTENTIAL OF ARSENIC IN DRINKING WATER	SHIRACHI, D.	80461002	CONT	78/10/25	$71,497

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

C A L I F O R N I A

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
RAMONA MUNICIPAL WATER DISTRICT ROMONA	SELENIUM REMOVAL FROM GROUNDWATER	SUTHERLAND, A.	80616001	INCR	79/02/06	$10,349
SOUTHERN CALIFORNIA, UNIV. OF LOS ANGELES	ANALYTICAL METHODS FOR HAZARDOUS ORGANICS IN LIQUID WASTE FROM COAL GASIFICATION AND LIQUEFACTION PL	YEN, T.	80616701	NEW	79/01/22	$40,000
SRI INTERNATIONAL MENLO PARK	THE ROLE OF PEROXYNITRATES IN THE ATMOSPHERE	D. HENDRY	80650601	NEW	79/03/20	$60,000
SRI INTERNATIONAL MENLO PARK	SYMPOSIUM ON THERMAL CONVERSION OF SOLID WASTES, RESIDUES, AND ENERGY CROPS	JONES, J.	80653601	NEW	79/03/29	$9,977
STANFORD UNIV. STANFORD	GROUNDWATER INJECTION OF RECLAIMED WATER IN PALO ALTO	MCCARTY, P.	80443103	INCR	79/02/06	$84,550

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COLORADO

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
** RESEARCH **						
BOULDER, CITY OF BOULDER	EVALUATION OF HIGH RATE INFILTRATION PERCOLATION BIDS TO IMPROVE WATER QUALITY	SMITH, DOUGLAS	80393102	INCR	78/12/28	$22,137
COLORADO STATE UNIV. FORT COLLINS	TOXIC EFFECTS ON THE AQUATIC BIOTA FROM COAL & OIL SHALE DEV.	THURSTON, R.	80395003	INCR	79/01/02	$15,271
COLORADO STATE UNIV. FORT COLLINS	VEGETATIVE STABILIZATION OF SPENT OIL SHALES	BERG, W.	80471902	INCR	78/12/13	$44,000
COLORADO STATE UNIV. FORT COLLINS	EFFECTS OF CONTROLLED SULFUR DIOXIDE FUMIGATION ON PRIMARY PRODUCER AND INVERTEBRATE CONSUMER	DODD, J.	80532002	INCR	79/03/29	$12,459
COLORADO STATE UNIV. FORT COLLINS	LEACHING CHARACTERISTICS OF RAW SURFACE STORED OIL SHALE	MCWHORTER, D.	80627801	INCR	79/01/02	$18,517
COLORADO STATE UNIV. FORT COLLINS	WATER QUALITY HYDROLOGY AFFECTED BY OIL SHALE DEVELOPMENT	MCWHORTER, D.	80687704	CONT	79/03/01	$25,790
DENVER, UNIV. OF DENVER	HIGH VOLTAGE CONTROL AND ELECTROSTATIC FIELD INVESTIGATIONS	RINARD, GEORGE	80573302	CONT	79/03/27	$194,023
** TRAINING **						
AMERICAN WATER WORKS ASSOC. DENVER	SAFE DRINKING WATER ACT FOR NON-COMMUNITY WATER SUPPLY SYSTEMS	HASKINS, BILL	90088401	NEW	79/01/30	$15,200
COLORADO STATE UNIV. FORT COLLINS	AIR POLLUTION TRAINING	WT. MANESS	90088501	INCR	79/03/05	$111,756

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	CONNECTICUT					
** FELLOWSHIPS **						
DOOLITTLE, W. J. WEST HAVEN	M.S.	NEW HAVEN, UNIV. OF	91083801	INCR	79/02/06	$177
SIMONE, L. WEST HAVEN	M.S./ENVRN. ENGR.	NEW HAVEN, UNIV. OF	91085401	INCR	79/02/06	$1,032

APPLICANT / MUNICIPALITY	PROJECT DIRECTOR / FELLOW / TITLE	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	DISTRICT OF COLUMBIA				
** RESEARCH **					
AMERICAN PETROLEUM INST. WASHINGTON	GOULD, J. INVESTIGATION OF THE EFFECTIVENESS OF SURFACE-ACTIVE AGENTS IN COMBATING OPEN-OCEAN OIL SPILLS	80605601	INCR	79/03/19	$24,000
NATIONAL ACADEMY OF SCIENCES WASHINGTON	KASPER, R. INTERNATIONAL ENVIRONMENTAL PROGRAMS COMMITTEE	80506702	CONT	79/01/19	$33,027
		80506702	INCR	79/02/26	$306
NATIONAL ACADEMY OF SCIENCES WASHINGTON	WHITE, ROBERT ACADEMY FORUM ON THE DEVELOPMENT OF OCEAN RESOURCES	80611501	INCR	78/11/21	$25,000
SOCIETY FOR OCCUPATIONAL & ENVRNTL WASHINGTON	ZIMMERMAN, S. PREPARATION OF PROCEEDINGS AND NON-TECHNICAL SUMMARY OF SOEH CONFERENCE PESTICIDES AND HUMAN HEALTH	80654901	NEW	78/12/08	$10,000
** TRAINING **					
AMERICAN PUBLIC HEALTH ASSOC. WASHINGTON	BRODBECK, S. RESOURCE CONSERVATION & RECOVERY ACT OF 1976 FOR HEALTH & ENV. PERSONNEL	90076801	INCR	78/12/12	$22,652
AMERICAN PUBLIC HEALTH ASSOC. WASHINGTON	BRODBECK, SEIKO THREE-YEAR PUBLIC HEALTH EDUCATION/TRAINING PROGRAM/OFFICE OF SOLID WASTE	90092901	NEW	78/12/13	$99,992
ENVIRONMENTAL ACTION FDN WASHINGTON	TENNANT, E. PUBLIC EDUCATION AND CITIZEN TRAINING FOR THE STATE IMPLEMENTATION OF RCRA	90093201	NEW	79/01/22	$50,000
LEAGUE OF WOMEN VOTERS EDUCATION FUND WASHINGTON	MESSA, S. PUBLIC EDUCATION ON RESOURCE CONSERVATION AND RECOVERY	90093301	NEW	79/01/19	$65,310
METROPOLITAN SEWERAGE AGENCIES ASSOC WASHINGTON	LINTON, RON PRETREATMENT MANAGEMENT TRAINING	90097701	NEW	78/11/08	$180,937

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

DISTRICT OF COLUMBIA

** TRAINING **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
MUNICIPAL FINANCE OFCRS. ASSOC. WASHINGTON	FINANCIAL MANAGEMENT ASSISTANCE PROJECT	PETERSEN, J.	90097601	NEW	78/12/01	$307,988
NATIONAL ASSOC. OF REGIONAL COUNCILS WASHINGTON	IMPLEMENTATION OF THE CLEAN AIR ACT	WEBSTER, R.	90076301	INCR	78/11/21	$65,682
NATIONAL CTR FOR RESOURCE REC INC WASHINGTON	SOURCE SEPARATION RESOURCE RECOVERY WORKSHOPS	ST. CLAIR, C. W.	90092201	NEW	79/01/31	$30,000
NATIONAL WILDLIFE FDN WASHINGTON	HAZARDOUS WASTE FACILITIES SITING WORKSHOPS	HAMPTON, K.	90093101	NEW	79/01/15	$60,000
NATURAL RES. DEFENSE COUNCIL, INC. WASHINGTON	CITIZEN HANDBOOK ON CLEAN AIR ACT AMENDMENTS OF 1977	AYRES, R.	90093401	NEW	78/12/28	$13,311
URBAN ENV. CONFERENCE WASHINGTON	REGIONAL WORKSHOPS TO INC REASE PUBLIC PARTICIPATION OF LABOR MINORITY AND ENVIRONMENTAL ORGANIZATIO	COLING, G.	90082301	INCR	79/03/29	$21,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

F L O R I D A

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
AMERICAN ELECTROPLATERS' SOCIETY, INC. WINTER PARK	CHARACTERIZATION OF METAL FINISHING WASTEWATER TREATMENT RESIDUES	SCHUMACHER, J.	80687001	NEW	79/03/05	$175,000
CHARLOTTE HARBOR WATER ASSOC. INC. CHARLOTTE HARBOR	STUDY OF REVERSE OSMOSIS FOR REMOVAL OF CONTAMINANTS FROM DRINKING WATER	DARBY, WILLIAM D.	80520701	INCR	79/02/22	$24,320
DADE CNTY, DEPT. PUB. HLTH. MIAMI	REMOVING ORGANIC SUBSTANCES WHICH ARE POTENTIAL CARCINOGENS EITHER ORIGINALLY PRESENT IN GROUND WATE	MORGAN, R.	80605201	INCR	79/02/06	$535,000
FLORIDA STATE UNIV. TALLAHASSEE	MESOSCALE SULFUR BALANCE STUDIES	WINCHESTER, J.	80388703	INCR	78/12/12	$50,000
FLORIDA STATE UNIV. TALLAHASSEE	HIGH SENSITIVITY FT NMR STUDIES OF ENVIRONMENTAL TOXIC MATERIALS	G. LEVY	80491603	CONT	79/03/19	$39,396
FLORIDA, UNIV. OF GAINSVILLE	SEWAGE SLUDGE VIRAL AND PATHOGENIC AGENTS IN SOIL-PLANT-ANIMAL SYSTEMS	DAVIDSON, J.	80457003	INCR	79/02/06	$126,461
FLORIDA, UNIV. OF GAINESVILLE	URBAN STORMWATER QUALITY MANAGEMENT ALTERNATIVES	HEANEY, J.	80566401	INCR	79/03/19	$36,328
FLORIDA, UNIV. OF GAINESVILLE	RELATIONSHIP BETWEEN BLACK MANGROVE FORESTS AND ESTUARINE WATERS	NORDLIE, FRANK	80607901	NEW	78/12/12	$33,000
FLORIDA, UNIV. OF GAINESVILLE	EFFECT OF CADMIUM ON SEWAGE WASTEWATER ON CYPRESS STRANDS	ODUM, H.	80628601	NEW	79/03/20	$38,531
HOLLY HILL, CITY OF HOLLY HILL	IMPROVED PERFORMANCE OF RECTANGULAR SECONDARY CLARIFIERS THRU IMPROVEMENTS IN HYDRAULIC EFFICIENCY	HORNBURG, J.	80647701	NEW	79/01/15	$28,016

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	FLORIDA					
** DEMONSTRATION **						
FLORIDA DEPT. OF ENVRN. REGULATION TALLAHASSEE	LAKE JACKSON NON-POINT SOURCE ABATEMENT PROGRAM	FARLEY, DAN	80481501	INCR	79/03/01	$25,150
** FELLOWSHIPS **						
HAZEN, I. GAINESVILLE	M.S./ENVRN. ENGR.	FLORIDA, UNIV. OF	91100401	INCR	79/02/06	$87

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

G E O R G I A

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
ATLANTA UNIV. ATLANTA	DEVELOPMENT OF METHODS FOR THE STABILIZATION OF PYROLYTIC OILS	POLK, M.	80444002	INCR	78/12/12	$54,002
GEORGIA INST. OF TECH. ATLANTA	DEVELOP DATA FOR SCALE-UP FOR CONTINUOUS PROCESSING OF PYROLYTIC OILS	KNIGHT, J.	80640301	NEW	78/12/28	$99,700
GEORGIA, UNIV, OF ATHENS	POTENTIAL IMPACT OF ACIDIFIED PRECIPITATION ON ELEMENT CYCLING AND PRODUCTION IN SOUTHERN APPALHIAN	MONK, C.	80530501	INCR	79/01/15	$12,910
GEORGIA, UNIV, OF ATHENS	A COMBINED ABSORPTION, FLUORESCENSE-EXCITATION, AND COHERENT ANTI STOKES RAMAN DETECTION SYSTEM	AZARRAGA, LEO	80643001	NEW	79/02/26	$106,000
GEORGIA, UNIV, OF ATHENS	NINTH SYMPOSIUM ON THE ANALYTICAL CHEMISTRY OF POLLUTANTS	ROGERS, L. B.	80648301	NEW	78/11/29	$27,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		H A W A I I				
** RESEARCH **						
HAWAII, UNIV. OF HONOLULU	RESPONSES OF A TROPICAL ESTUARY TO RELAXATION OF SEWAGE STRESS	SMITH, S.	80398303	INCR	78/12/13	$40,000
HAWAII, UNIV. OF HONOLULU	HAWAII EPIDEMIOLOGIC STUDIES PROGRAM	WONG, LYLE	80685001	NEW	78/12/28	$352,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	I D A H O					
** RESEARCH **						
MORGAN, RANDALL THIN FALLS	33 TONS PER ACRE,23-MIN,16MM SOUND FILE (COLOR) DEALING W/IRRIGATION, SOIL EROSION & WATER POLLUTION	MORGAN, R.	80522601	INCR	78/12/28	$20,000

APPLICANT / MUNICIPALITY	PROJECT DIRECTOR / FELLOW / TITLE	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
ILLINOIS					
** RESEARCH **					
AMERICAN PUBLIC WORKS ASSOC, CHICAGO	SULLIVAN, R. EVALUATION & TECHNOLOGY TRANSFER OF THE SWIRL CONCENTRATOR PRINCIPLE	80315701	INCR	78/12/28	$12,400
AMERICAN PUBLIC WORKS ASSOC, CHICAGO	SULLIVAN, R. ASSESSMENT OF SEWER SEALANTS	80656701	NEW	79/03/20	$28,177
IIT RESEARCH INST, CHICAGO	SCHIFF, L. TRACHEAL ORGAN CULTURE AS AIR POLLUTION DAMAGE INDICATOR	80504902	CONT	79/02/22	$70,000
IIT RESEARCH INST, CHICAGO	ARANYI, C. EFFECT OF INDUSTRIAL PARTICULATE EMISSIONS ON ALVEOLAR MACROPHAGES	80514102	CONT	79/03/12	$82,983
IIT RESEARCH INST, CHICAGO	ARANYI C. EFFECTS OF CONVENTIONAL AND ADVANCED COAL CONVERSION BY-PRODUCTS ON THE PULMONARY SYSTEM	80531702	CONT	79/03/29	$89,980
IIT RESEARCH INST, CHICAGO	FANNIN, K. STUDY OF MICROBIAL AEROSOLS EMITTED FROM A WATER RECLAMATION PLANT	80606201	INCR	78/11/06	$4,226
IIT RESEARCH INST, CHICAGO	EHRLICH, R. ANIMAL HEALTH EFFECT STUDIES OF INHALED PARTICULATES	80632701	INCR	79/01/30	$104,908
ILLINOIS, UNIV. MEDICAL CTR, CHICAGO	EPSTEIN, SAMUEL BIOSYNTHESIS OF N-NITROSO COMPOUNDS	80543103	CONT	79/03/29	$163,931
ILLINOIS, UNIV. OF URBANA	STUKEL, J. OHIO RIVER BASIN ENERGY STUDY, PHASE II: ILLINOIS CORE TEAM PARTICIPATION	80558702	CONT	78/12/11	$180,847
ILLINOIS, UNIV. OF URBANA	STUKEL, JAMES OHIO RIVER BASIN ENERGY STUDY; PHASE II: EXPERIMENTAL MANAGEMENT PLAN	80558801	INCR	78/12/27	$613,168

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
ILLINOIS						
** RESEARCH **						
ILLINOIS, UNIV. OF URBANA	APPLICATION OF MICROPROCESSOR TECHNOLOGY TO BIOBEHAVIORAL DATA ACQUISITION	DONCHIN, E.	80562802	CONT	78/12/27	$41,374
ILLINOIS, UNIV. OF URBANA	ASSESSMENT OF SOIL, CLAY, AND CAUSTIC SODA EFFECTS ON LAND DISPOSAL OF CHLORINATED-HYDROCARBON WASTE	GRIFFIN, R.	80633501	NEW	79/02/06	$106,215
ILLINOIS, UNIV. OF URBANA	HABITAT STRUCTURE & FISH COMMUNITIES IN WARMWATER STREAMS	KARR, JAMES	80639101	NEW	78/12/28	$64,022
ILLINOIS, UNIV. OF CHICAGO	RECOVERY OF ASBESTOS FIBERS FROM BABOON TISSUES	HALLENBECK, W.	80652601	NEW	79/03/29	$29,960
NORTHBROOK, VILLAGE OF NORTHBROOK	NORTHBROOK - SEWER RELINING STUDY, 1978	WEIDAW, R.	80632201	NEW	78/12/28	$25,720
WESTERN ILLINOIS UNIV. MACOMB	TRADESCANTIA MICRONUCLEI IN TETRAD MUTAGEN TEST FOR ON SITE MONITORING AND FURTHER VALIDATION	TE-HSIU MA	80642201	NEW	79/02/06	$24,219

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		INDIANA				
** RESEARCH **						
INDIANA UNIV. FDN. INDIANAPOLIS	OHIO RIVER BASIN ENERGY STUDY, PHASE II CONTINUATION	RANDOLPH, J.	80560902	CONT	78/10/25	$45,687
NOTRE DAME, UNIV. OF NOTRE DAME	FULL-SCALE STUDY OF SEQUENCING BATCH REACTORS	IRVINE, R.	80659801	NEW	79/03/05	$140,000
PURDUE RES. FDN WEST LAFAYETTE	PURDUE UNIVERSITY CORE TEAM PARTICIPATION IN OHIO RIVER BASIN ENERGY STUDY PHASE II: SOCIAL VALUES	POTTER, H.	80645101	NEW	78/11/08	$65,888
** DEMONSTRATION **						
INDIANAPOLIS, CONSOLIDATED CITY OF INDIANAPOLIS	FULL SCALE DEMONSTRATION OF WASTE SLUDGE INCINERATOR FUEL REDUCTION	WALTZ, EUGENE	80624801	NEW	78/12/28	$159,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	I O W A					
** RESEARCH **						
AMES, CITY OF AMES	EVALUATION OF AMES SOLID WASTE RESOURCES & ENERGY RECOVERY SYSTEM	CHANTLAND, A.	80390303	INCR	78/11/21	$236,854
IOWA STATE UNIV. AMES	DEVELOPMENT OF SAFE METHODS	HALL, C. V.	80453303	CONT	78/11/21	$178,935
IOWA, UNIV. OF IOWA CITY	STUDIES OF DRINKING WATER QUALITY AND CANCER	ISACSON, P.	80630101	NEW	79/03/05	$204,469
** TRAINING **						
KIRKWOOD COMMUN. COLLEGE CEDAR RAPIDS	OPERATIONAL CONSIDERATIONS FOR WWT PLANT DESIGN	BARDONNER, C.	90074701	INCR	79/03/13	$18,660

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

KENTUCKY

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
KENTON CNTY, KENTUCKY FT. MITCHELL	STANDARDIZED WATER UTILITY FINANCIAL REPORTING SYSTEM	FENDER, V.	80644801	NEW	78/12/27	$75,000
			80644801	INCR	79/03/20	$38,000
KENTUCKY RES. FDN, UNIV. OF LEXINGTON	OHIO RIVER BASIN STUDY, PHASE 2; YEAR 2	BLOME, D.	80559002	CONT	78/11/17	$8,838
KENTUCKY, UNIV. OF LEXINGTON	CHARGED MEMBRANE UF & SULFIDE PRECIPITATION TO TREAT NONFERROUS METAL PRODUCTION WASTES	GRIEVES, R.	80456802	INCR	79/01/30	$118,714
LOUISVILLE, UNIV. OF LOUISVILLE	OHIO RIVER BASIN ENERGY STUDY (ORBES), PHASE II	SPENCER, H.	80556902	CONT	78/11/28	$38,317
LOUISVILLE, UNIV. OF LOUISVILLE	MOSQUITO BIOASSAYS FOR DRINKING WATER TOXICANTS	LANG, C.	80628401	NEW	79/02/26	$49,999

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
LOUISIANA						
** RESEARCH **						
JEFFERSON PARISH JEFFERSON	GRANULAR ACTIVATED CARBON STUDIES	DONELON, J.	80688902	CONT	79/03/16	$206,357
NEW ORLEANS, UNIV. OF NEW ORLEANS	FORMATION OF CARCINOGENIC PHOTOOXIDATION PROD. FR. POLYAROMATIC	LASETER, J.	80468702	INCR	78/12/12	$8,085
SOUTHERN UNIV. BATON ROUGE	EFFECTS OF POST-IMPLANTATION EXPOSURE TO SELECTED PESTICIDES ON REPRODUCTIVITY IN RATS	SPENCER, F.	80497402	INCR	79/01/15	$13,306
TULANE UNIV. NEW ORLEANS	SURVEY OF WASTE SLUDGES FOR PARASITIC CONTAMINATION IN U.S.	REIMERS, R. S.	80510701	INCR	79/03/01	$12,000
** TRAINING **						
NEW ORLEANS, CITY OF NEW ORLEANS	NEW ORLEANS URBAN ENVRL T INITIATIVE	HUMPHREY, A.	90093001	NEW	79/01/24	$200,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
MAINE						
** RESEARCH **						
MAINE, UNIV. OF ORONO	ATMOSPHERIC EMISSIONS FROM ASPHALT PRODUCTS	SIMARD, G.	80600901	INCR	78/12/29	$25,303
NASSON COLLEGE SPRINGVALE	BACTERIAL SURVIVAL IN POTABLE WATER WITH LOW TURBIDITY	CIULLO, R.	80632901	NEW	78/10/25	$61,611

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	M A R Y L A N D					
** RESEARCH **						
MARYLAND, UNIV. OF COLLEGE PARK	TWO YEAR SUPPORT OF MEMBERS ON STANDARDIZING PRESTANDARDIZING AND DEVELOPMENT COMMITTEES IN THE AREA	SIBLEY, E.	80622101	NEW	79/03/20	$12,855

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APPLICANT / MUNICIPALITY	PROJECT DIRECTOR / FELLOW / TITLE	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
MASSACHUSETTS					
** RESEARCH **					
ARTHUR D. LITTLE, INC. CAMBRIDGE	DEFILIPPI, R. PROCESS FOR ACTIVE CARBON REGENERATION AND FOR RECOVERY OF HARZARDOUS PESTICIDE WASTES	80455401	INCR	78/12/28	$70,182
HARVARD UNIV. CAMBRIDGE	BRAIN, J. EFFECT OF SO2 AND SULFATES ON RESPIRATORY DEFENSE MECHANISMS	80509103	CONT	79/02/22	$72,883
LOWELL, UNIV. OF LOWELL	SEGALL, B. MONITORING SEPTAGE ADDITION TO WASTEWATER TREATMENT PLANTS	80540601	INCR	79/02/26	$46,084
MASSACHUSETTS GEN. HOSPITAL BOSTON	FITZPATRICK, T. FOLLOW-UP STUDIES ON MELANOMA PATIENTS FOR EXPOSURE HABITS, SKIN TYPES, ETC.	80554001	INCR	79/03/01	$5,875
MASSACHUSETTS, UNIV. OF AMHERST	TUTHILL, R. HUMAN HEALTH EFFECTS OF ELEVATED DRINKING WATER SODIUM LEVELS	80561202	CONT	79/03/13	$157,042
MASSACHUSETTS, UNIV. OF AMHERST	MOORE, G. HISTORICAL COHORT EPIDEMIOLOGICAL STUDY OF THE HEALTH EFFECTS ON NEWBORNS AND INFANTS OF C102	80613901	NEW	79/01/22	$53,189
MASSACHUSETTS, UNIV. OF AMHERST	CRAKER, LYLE STRESS ETHYLENE PRODUCTION AS A MEASURE OF AIR POLLUTANT PHYTOTOXICITY	80641201	NEW	79/01/22	$76,996
MASSACHUSETTS, UNIV. OF MEDICAL SCHOOL WORCESTER	BLACKLOW, NEIL DETECTION OF VIRAL GASTROENTERITIS AGENTS	80659101	NEW	79/03/29	$60,000
** DEMONSTRATION **					
BOSTON METRO. DIST. COMM. BOSTON	FERULLO, A. CHARLES RIVER LOWER BASIN DESTRATIFICATION PROJECT	80481201	INCR	78/11/21	$92,156
MARLBOROUGH, CITY OF MARLBOROUGH	SHARON, PAUL HIGH LEVEL OZONE DISINFECTION STUDY	80494602	CONT	79/03/20	$122,457

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

M A S S A C H U S E T T S

** TRAINING **

MASSACHUSETTS INST. OF TECH CAMBRIDGE	SUMMER COURSE ON WATER/TOXIC CHEMICALS	WOGAN, G.	90093501	NEW	79/02/22	$225,390

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

M I C H I G A N

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
CHICAGO, CITY OF CHICAGO	TECHNICAL, ECONOMIC & ENVRN. EVALUATION OF CITY OF CHICAGO REFUSE-DERIVED FUEL PROJECT	STEDMAN, D.	80562101	INCR	79/02/06	$21,906
MICHIGAN STATE UNIV. MONTICELLO	ASSESSMENT OF ENERGY-RELATED TOXICANT STRESS IN AN ENGINEERED ECOSYSTEM	BOLING, R. H. JR.	80621401	INCR	78/10/27	$346,593
MICHIGAN, UNIV. OF ANN ARBOR	DEVELOPMENT & APPLICATION FOR OZONE VOLLAMETRIC MEMBRANE ELECTRODE	MANCY, KHALIF	80483403	CONT	78/12/27	$28,951
MICHIGAN, UNIV. OF ANN ARBOR	HEAVY METAL ACCUMULATION IN BENTHIC ALGAL COMMUNITIES	SICKO-GOAD, L.	80514603	CONT	79/03/29	$51,875
MICHIGAN, UNIV. OF ANN ARBOR	ASSESSMENT OF THE PRESENT STATUS OF BENTHIC MICRO-INVERTEBRATES IN LAKE MICHIGAN	MOZLEY, S.	80533301	INCR	79/02/06	$1,739
MICHIGAN, UNIV. OF ANN ARBOR	REMOVAL OF TOXIC SUBSTANCES FROM WASTEWATERS BY INTEGRATED BIOLOGICAL-ACTIVATED CARBON TREATMENT	WEBER, W.	80603001	INCR	78/12/28	$29,256
MICHIGAN, UNIV. OF ANN ARBOR	FEASIBILITY STUDY FOR THE MATHEMATICAL MODELING AND CONTROL OF CLADOPHORA IN THE GREAT LAKES	CANALE, R.	80614901	INCR	78/12/29	$6,000
MICHIGAN, UNIV. OF ANN ARBOR	ORGANIC & ORGANOTIN COMPOUNDS LEACHED FROM POLYVINYL CHLORIDE WATER PIPE	BOETTNER, E.	80627501	NEW	78/10/24	$104,301
MICHIGAN, UNIV. OF ANN ARBOR	ICHTHYOPLANKTON LOSSES IN WESTERN LAKE ERIE IN 1975-77	PATTERSON, R.	80656501	NEW	79/03/27	$20,669
MUSKEGON, COUNTY OF (DPW) MUSKEGON	FATE OF ORGANIC POLLUTANTS IN A WASTEWATER LAND TREATMENT SYSTEM USING LAGOON IMPOUNDMENT AND SPRAY	DEMIRJIAN, Y.	80687301	NEW	79/03/12	$171,621

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
MICHIGAN						
** TRAINING **						
MICHIGAN, WEST, ENV. ACT. ED. FDN. GRAND RAPIDS	CITIZEN EDUCATION & ACTIVITY	CONNER, R.	90077201	INCR	79/03/19	$15,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

MINNESOTA

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
MINNESOTA, UNIV. OF ST. PAUL	FORMATION OF ATMOSPHERIC AEROSOLS	WHITBY, K.	80385103	INCR	78/11/21	$80,000
MINNESOTA, UNIV. OF ST. PAUL	OXYGEN PRODUCTION, LOSS, EXCHANGE & TRANSPORT RATES IN MERS FIELD CHANNELS	STEFAN, H.	80567801	NEW	79702/06	$33,084
MINNESOTA, UNIV. OF ST. PAUL	ENVIRONMENTAL IMPACT OF ENERGY-RELATED ORGANIC COMPOUNDS ON AQUATIC ORGANISMS	CARLSON, R.	80608301	INCR	79/03/05	$42,899
MINNESOTA, UNIV. OF ST. PAUL	OPTIMIZING COAGULATION-ABSORPTION FOR HALOFORM AND TOC REMOVAL	SEMMENS, M.	80637701	NEW	79/03/27	$63,757

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** DEMONSTRATION **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
ELY, CITY OF ELY	LAKE RESTORATION BY PHOSPHORUS CONTROL	GRAMEK, J. P.	80230901	INCR	79/03/29	$208,000
MINNEAPOLIS, CITY OF MINNEAPOLIS	WRITING BOOK ON TOXICOLOGY OF PESTICIDES	SMITH, PERRY	80426001	INCR	78/12/04	$7,378

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
M I S S I S S I P P I						
** RESEARCH **						
MISSISSIPPI STATE UNIV. MISSISSIPPI STATE	REACTIONS OF DISSOLVED POLLUTANTS IN AQUEOUS SOLUTIONS	CHIANG-HAI KUO	80525302	CONT	79/03/20	$49,981

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	MISSOURI					
** RESEARCH **						
MISSOURI, UNIV. OF COLUMBIA	BIOLOGICALLY MEDIATED CORROSION AND DETERIORATION OF WATER QUALITY IN WATER DISTRIBUTION SYSTEMS.	O'CONNOR, J.	80444404	CONT	79/03/12	$56,242
MISSOURI, UNIV. OF ROLLA	RADIUS OF INFLUENCE OF SUBSURFACE INJECTION WELLS	WARNER, DON	80503901	INCR	79/02/06	$20,457
MISSOURI, UNIV. OF ROLLA	REDUCTION OF TOXIC METALS CONCENTRATIONS IN MUNICIPAL WASTEWATER TREATMENT SLUDGES	HUANG, JU-CHANG	80646701	NEW	79/01/30	$67,785
ST. LOUIS UNIV. ST. LOUIS	SERIAL MEASUREMENT OF PULMONARY FUNCTION IN OUTDOOR WORKERS IN ST. LOUIS METRO. AREA	SLAVIN, R.	80500601	INCR	79/01/30	$8,201
UNIVERSITY OF MISSOURI ROLLA	HEALTH IMPACTS OF DRINKING CONTAMINATED WITH BY-PRODUCTS.	BOBBY G. WIXSON	80557901	INCR	79/02/22	$26,843
WASHINGTON UNIV. ST. LOUIS	SULFUR BUDGET IN LARGE PLUMES	HUSAR, R. B.	80389602	INCR	78/11/21	$70,000
WASHINGTON UNIV. ST. LOUIS	SULFUR BUDGET IN POWER PLANT PLUMES	GILLANI, N.	80591801	INCR	78/11/06	$48,691
			80591801	INCR	79/03/15	$70,000
WASHINGTON UNIV. ST. LOUIS	A BUDGET OF MAN-MADE SULFUR, NITROGEN AND HYDROGEN ION OVER THE EASTERN U.S. AND SE CANADA AIR SHED	HUSAR, R.	80654801	NEW	79/03/29	$99,976
** TRAINING **						
MISSOURI, UNIV. OF ROLLA	NON-COMMUNITY WATER SYSTEMS INVENTORY FOR THE STATE OF MISSOURI	SHELTON, KENT	90097901	NEW	79/03/12	$45,000

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	MISSOURI					
** TRAINING **						
WATER & WASTEWATER TECH. SCH. NEOSHO	WASTEWATER TREATMENT PLANT O&M--A NATIONAL ISSUE. TWO NATIONAL SYMPOSIA DEALING WITH USEPA, STATE,	LAYTON, R.	90093601	NEW	79/02/06	$100,051

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

MONTANA

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
HELENA, CITY OF HELENA	EVALUATION OF ACTIVATED BIO-FILTER WASTEWATER TREATMENT PROCESS	NISBET, D.	80604701	INCR	78/10/25	$126,000
MONTANA, UNIV. OF MISSOULA	INVESTIGATION OF THE BIOENVIRONMENTAL IMPACT OF FOSSIL FUEL-FRIED POWER PLANTS IN THE FORT UNION BAS	GORDON, C. C.	80561002	CONT	78/10/25	$65,450
NORTHERN CHEYENNE TRIBAL COUNCIL LAME DEER	ASSESSMENT OF THE POTENTIAL IMPACTS OF PROPOSED ENERGY DEVELOPMENT ON THE WATER RESOURCES	MONTEAU, R.	80608201	INCR	79/02/22	$151,125

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	N E B R A S K A					
** RESEARCH **						
NEBRASKA, UNIV. OF LINCOLN	ULTRATRACE ANALYSIS OF TETRACHLORODIBENZODIOXIN (TCDD) IN ENVIRONMENTAL SAMPLES	GROSS, M.	80684701	NEW	78/12/11	$309,426

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
NEVADA						
** RESEARCH **						
DESERT RESEARCH INST., RENO	MONITORING THE IMPACTS OF GEOTHERMAL DEVELOPMENT OF GROUND WATER SYSTEMS	HESS, J.	80645701	NEW	79/03/27	$90,000
** DEMONSTRATION **						
WASHOE COUNTY, NEVADA RENO	LAKE TAHOE CLEAN LAKES SEDIMENT & NUTRIENT CONTROL PROJECT	MACINTYRE, J.	80630801	NEW	79/01/30	$200,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	NEW HAMPSHIRE					
** RESEARCH **						
MANCHESTER, CITY OF MANCHESTER	INVESTIGATION OF A FLUID BED CARBON REGENERATION SYSTEM OF MANCHESTER, NH	KITTREDGE, DAVID	80537101	INCR	78/12/12	$110,400

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		NEW JERSEY				
** RESEARCH **						
NORTHWEST BERGEN CNTY, SEWER AUTH, WALDWICK	ULTRAVIOLET DISINFECTION OF SECONDARY SEWAGE TREATMENT PLANT EFFLUENT	HOLLANDER, C.	80488001	INCR	79/01/30	$44,033

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NEW YORK

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
AMERICAN LUNG ASSOC. NEW YORK	PHYSICIAN SEMINARS ON HEALTH EFFECTS OF AIR POLLUTION	SPROLES, SARAH	80659401	NEW	79/03/13	$63,200
AMERICAN NATIONAL STANDARDS INST. NEW YORK	SECRETARIAT ACTIVITIES OF INTERNATION STANDARDS ORGANIZATION (ISO) TECHNICAL COMMITTEE (TC) 146	RESNICK, IS.	80570602	CONT	79/02/26	$29,115
AMERICAN-SCANDINAVIAN FDN, THE NEW YORK	INFLUENCE OF NUTRITIONAL FACTORS ON THE TOXICITY AND BIOCONCENTRATION OF CHEMICALS IN FISH	DAVE, GORAN	80686001	NEW	79/01/15	$6,000
ASSOCIATED UNIVERSITIES, INC. UPTON	FATE OF HUMAN VIRUSES IN GROUNDWATER RECHARGE SYSTEMS UTILIZING TERTIARY TREATED EFFLUENTS	VAUGHN, J.	80477602	INCR	78/12/26	$96,163
BOYCE THOMPSON INST. YONKERS	RESPONSE OF PLANTS TO AIR POLLUTANTS	MCCUNE, D.	80451303	INCR	78/12/13	$52,500
CORNELL UNIV. ITHACA	NATIONAL STATISTICAL ASSESSMENT OF DOMESTIC RURAL WATER	FRANCIS, JOE D.	80490001	INCR	78/10/31	$220,929
DUDLEY OBSERVATORY LATHAM	FIELD INSTRUMENTATION FOR REAL-TIME MONITORING OF DUST IN THE AIR	PATASHNICK, H.	80522202	INCR	79/02/22	$25,970
FLORIDA A&M UNIV. NEW YORK	SYMPOSIUM ON HEALTH ASPECTS OF NONIONIZING RADIATION (A.I.R.)	SHILS, M.	80671001	NEW	79/03/27	$12,300
GLEN COVE, CITY OF (NEW YORK) GLEN COVE	PILOT PLANT TESTING REMOVAL OF ORGANIC CONTAMINANTS FROM WATER SUPPLY	CURUSO, A.	80635501	NEW	78/10/26	$148,272
NEW YORK ACADEMY OF SCI NEW YORK	CONFERENCE ON AEROSOLS: URBAN AND RURAL CHARACTERISTICS, SOURCE AND TRANSPORT STUDIES	MARKS, E.	80638101	NEW	78/11/29	$15,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
NEW YORK						
** RESEARCH **						
NEW YORK HEALTH RES., INC. / ALBANY	STRATOSPHERIC OZONE IN URBAN AIR	PARHAM, T.	80591301	INCR	78/12/13	$10,528
NEW YORK STATE DEPT. OF ENVRN. CONSERV / ALBANY	FUEL ECONOMY & EMISSIONS PERFORMANCE OF DIESEL AUTOMOBILES	GIBBS, R.	80593401	INCR	78/12/28	$127,759
NEW YORK STATE HLTH RES. / ALBANY	VIRUS-SOIL INTERACTIONS	PARHAM, T.	80474302	INCR	78/11/06	$47,999
RENSSELAER POLYTECHNIC INST. / TROY	AN AQUATIC ECOSYSTEM MODELING PACKAGE FOR MICROCOMPUTERS	PARK, RICHARD	80629901	NEW	79/01/22	$50,000
SYRACUSE RES. CORP. / SYRACUSE	NEW APPROACHES TO THE PRESERVATION OF CONTAMINANTS IN WATER SAMPLES	SAXENA, J.	80460902	INCR	79/01/23	$5,359
SYRACUSE RES. CORP. / SYRACUSE	ASSESSMENT OF MUTAGENIC/CARCINOGENIC POTENTIAL OF MIXTURE OF ORGANIC SUBSTANCES IN RENOVATED WATER	SAXENA, JITENDRA	80481303	CONT	78/12/27	$76,461
SYRACUSE RES. CORP. / SYRACUSE	STUDY OF THE WATER DISTRIBUTION SYSTEM AS A POTENTIAL SOURCE OF MUTAGENS CARCINOGENS IN DRINKING WAT	SAXENA, J.	80641301	NEW	79/01/30	$84,510
SYRACUSE UNIV. / SYRACUSE	QUANTITATION OF ADSORBED VIRUSES IN WASTE & OTHER WATER	SMITH, J.	80377403	INCR	78/11/21	$30,093
** DEMONSTRATION **						
ITHACA, CITY OF / ITHACA	EVALUATION OF DEEP SHAFT BIOLOGICAL WASTEWATER TREATMENT PROCESS	DINGMAN, R.	80608101	INCR	78/10/27	$150,000
NEW YORK STATE DEPT. OF ENVRN. CONSERV / ALBANY	TIVOLI LAKES RESTORATION PROJECT	BROMBERG, A.	80490601	INCR	78/12/28	$21,050

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	NEW YORK					
** DEMONSTRATION **						
NEW YORK STATE DEPT. OF ENVRN. CONSERV ALBANY	RENOVATION ON THE 59TH ST. POND, CENTRAL PARK	BERLE, PETER	80490801	INCR	79/01/31	$173,015
** TRAINING **						
HEALTH SYS AGENCY FOR N. E. NEW YORK ALBANY	TOXICS SUBSTANCES PUBLIC PARTICIPATION PROGRAM - HUDSON RIVER WATER SHED	KEANE, J. J.	90092601	NEW	78/11/21	$5,000
HEALTH SYS. AGENCY OF NEW YORK CITY NEW YORK	TOXIC SUBSTANCES EDUCATIONAL PLANNING FOR HEALTH CARE PROVIDERS	HOEHLER, S.	90092501	NEW	78/12/04	$3,500
HUDSON RIVER FILM CO., INC. GARRISON	HUDSON RIVER FILM PROJECT	HOTZ, J.	90088101	NEW	78/12/04	$5,000
MOHAWK-HUDSON COUNCIL ON EDUC. TV SCHENECTADY	TOXIC SUBSTANCES PUBLIC PARTICIPATION PILOT PROJECT-NEW YORK (MEDIA OUTREACH)	NATHANSON, N.	90092401	NEW	78/11/21	$10,000
NEW PUBLIC INT. RES. CTR. INC. NEW YORK	TOXIC SUBSTANCES PUBLIC PARTICIPATION PILOT PROJECT	HANG, W. L.	90092301	NEW	78/11/21	$3,000
** FELLOWSHIPS **						
HART, T. BROOKLYN	AGENCY/PART TIME	NEW YORK POLYTECHNIC	91135601	NEW	79/03/29	$4,686

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APPLICANT / MUNICIPALITY	PROJECT DIRECTOR / FELLOW / TITLE	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

NORTH CAROLINA

** RESEARCH **

APPLICANT / MUNICIPALITY	PROJECT DIRECTOR / FELLOW / TITLE	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
AMERICAN TEXTILE MANUFACTURERS INST. CHARLOTTE	NILES, O JAY TECHNICAL & ECONOMIC EVALUATIONS OF BATEA GUIDELINES-TEXTILES	80432901	INCR	78/11/21	$33,000
DUKE UNIV. BEAUFORT	SUTHERLAND, J. EFFECTS OF THERMAL ADDITIONS ON THE DYNAMICS OF FOULING COMMUNITIES AT BEAUFORT, NC	80385603	INCR	78/11/29	$70,000
DUKE UNIV. DURHAM	SHELBURNE, J. D. ULTRASTRUCTURE AND X-RAY MICROANALYSIS OF MACROPHAGES EXPOSED TO NON-CRITERIA POLLUTANTS	80546002	CONT	78/11/17	$69,920
DUKE UNIV. DURHAM	MENZEL, D. PHARMACOLOGICAL EFFECTS OF NITRATE EXPOSURE	80633701	NEW	79/02/06	$445,000
NORTH CAROLINA STATE UNIV. RALEIGH	MCKENZIE, W. CYTOLOGICAL EFFECTS OF HUMAN EXPOSURE TO POTENTIALLY MUTAGENIC ENVIRONMENTAL POLLUTANTS	80573902	CONT	79/01/30	$52,457
NORTH CAROLINA, UNIV. OF CHAPEL HILL	JOHNSON, D. J. ULTRAVIOLET DISINFECTION OF FILTERED AND UNFILTERED SECONDARY WASTEWATER	80477001	INCR	79/03/15	$43,173
NORTH CAROLINA, UNIV. OF CHAPEL HILL	SINGER, P. UPTAKE & RELEASE OF HAZARDOUS SUBSTANCES BY SUSPENDED MATERIALS & SEDIMENT IN LAKES	80494401	INCR	79/02/06	$30,135
NORTH CAROLINA, UNIV. OF CHAPEL HILL	BRINKHOUS, K. M. CARBON MONOXIDE AND ACCELERATED ATHEROSCLEROSIS	80495902	INCR	79/03/15	$10,000
NORTH CAROLINA, UNIV. OF CHAPEL HILL	JEFFRIES, H. OUTDOOR SIMULATION OF AIR POLLUTION CONTROL STRATEGIES	80572602	CONT	79/02/06	$90,000
NORTH CAROLINA, UNIV. OF CHAPEL HILL	FOX, D. EXPERIMENTAL STUDY OF AEROSOL FORMATION MECHANISMS IN A CONTROLLED ATMOSPHERE	80607001	INCR	79/03/15	$30,000

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N O R T H C A R O L I N A				
** RESEARCH **						
NORTH CAROLINA, UNIV. OF CHAPEL HILL	EFFECTS OF POLLUTANTS ON HUMAN VIRAL RESPIRATORY DISEASE	POWELL, D.	80651401	NEW	79/03/19	$77,995
NORTH CAROLINA, UNIV. OF CHAPEL HILL	EFFECTS OF NITRATE/NITRITE COMPOUNDS ON RESPIRATORY EPITHELIUM	BOUCHER, R	80653901	NEW	79/03/20	$185,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

OHIO

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
AKRON, UNIV. OF AKRON	EFFECTS OF AIR POLLUTION: A LONGITUDINAL CROSS SECTIONAL APPROACH (RENEWAL)	MOSTARDI, R. A.	80425602	INCR	79/02/22	$124,390
BATTELLE MEMORIAL INST. COLUMBUS	TECHNICAL AWARENESS IN THE NONFERROUS METALS INDUSTRY PILOT STUDY	CHERRY, R.	80509501	INCR	79/02/06	$19,555
CASE WESTERN RESERVE UNIV. CLEVELAND	THE DISPERSION AND FATE OF CONTAMINANTS IN A STRATIFIED LAKE	LICK, WILBERT	80571602	CONT	79/02/06	$181,985
			80571602	INCR	79/03/27	$14,420
CHRIST HOSPITAL INST. OF MEDICAL RES. CINCINNATI	DETERMINATION OF MINIMAL HUMAN INFECTIONS DOSE OF AN ENTEROVIRUS IN DRINKING WATER	SCHIFF, G.	80617301	NEW	79/01/15	$126,708
CINCINNATI, CITY OF CINCINNATI	EVALUATION OF THE HEALTH RISK ASSOC. WITH THE TREATMENT AND DISOSAL OF MUN. WASTEWATER SLUDGE	CLARK, C.	80544501	INCR	79/02/26	$428,783
CINCINNATI, UNIV. OF CINCINNATI	HEALTH RISK OF HUMAN EXPOSURE TO WASTEWATERS	CLARK, S.	80364303	INCR	78/11/29	$111,261
CINCINNATI, UNIV. OF CINCINNATI	PROCESS AUTOMATION INVESTIGATIONS OF ENVIRONMENTAL CONTROL PROCESSES	GARRETT, P.	80575802	CONT	79/03/13	$46,320
CINCINNATI, UNIV. OF CINCINNATI	PERFORMANCE CHARACTERISTICS OF PACKAGE WATER TREATMENT PLANTS	MORAND, J.	80644901	NEW	78/11/29	$80,000
CINCINNATI, UNIV. OF CINCINNATI	SUPPORT FOR SYMPOSIA ON BIOLOGICAL EFFECTS OF ENVIRONMNETAL POLLUTANTS: AEROSOL GENERATION & EXPOSU	WILLEKE, KLAUS	80663301	NEW	79/02/28	$29,882

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APPLICANT / MUNICIPALITY	PROJECT DIRECTOR / FELLOW / TITLE	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
OHIO					
** RESEARCH **					
CINCINNATI, UNIV. OF CINCINNATI	LOPER, J. MUTAGENESIS AND CARCINOGENESIS CHARACTERIZATION OF ORGANICS IN DRINKING WATER	80687202	CONT	79/02/22	$328,145
MIAMI UNIV. OXFORD	GORDON, G. IMPROVED TECHNIQUES FOR RESIDUAL OZONE	80630201	NEW	78/11/29	$75,610
OHIO STATE UNIV. COLUMBUS	GORDON, S. OHIO RIVER BASIN ENERGY STUDY, PHASE II	80558902	CONT	78/11/06	$86,313
OHIO STATE UNIV. COLUMBUS	BAILEY, R. OHIO RIVER BASIN ENERGY STUDY, PHASE II	80560302	CONT	78/11/06	$80,073
OHIO STATE UNIV. COLUMBUS	CALVERT, J. KINETIC STUDY OF SIMULATED ATMOSPHERES CONTAINING COMMON SULFUR, NITROGEN, AND CARBON POLLUTANTS	80647901	NEW	79/02/06	$140,000
OHIO STATE UNIV. COLUMBUS	COURI, DANIEL BIOLOGICAL ADEQUACY AND TOXICITY OF SELENIUM COMPOUNDS FROM FOOD AND WATER	80687902	CONT	79/03/19	$135,369
OHIO STATE UNIV. RES. FDN. COLUMBUS	HART, R. DEVELOPMENT OF A TISSUE SELECTIVE IN VIVO BIOASSAY FOR ENVIRONMENTAL AGENTS PRODUCING DNA DAMAGE	80533702	CONT	78/12/27	$481,940
WRIGHT STATE UNIV. DAYTON	TIERNAN, T. QUANTITATION OF PARTS-PER-TRILLION LEVELS OF 2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN IN EPA-FURNISHED	80684601	NEW	78/12/11	$247,504
** DEMONSTRATION **					
FARM BUREAU DEVELOPMENT CORP. COLUMBUS	JACK K. HILL DEMONSTRATION TO SHOW OHIO LAND OWNERS	80518901	INCR	79/03/19	$500,000
** TRAINING **					
CINCINNATI, UNIV. OF CINCINNATI	FOWLER, T. WATER POLLUTION CONTROL PROFESSIONAL TRAINING	90094001	NEW	79/03/12	$30,866

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

OHIO

** TRAINING **

OHIO STATE UNIV. COLUMBUS	INFORMATION COLLECTION, ANALYSIS AND DISSEMINATION (EPA)	HOWE, R.	90071002	INCR	79/03/19	$25,240

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	OKLAHOMA					
** RESEARCH **						
EAST CENTRAL OKLAHOMA STATE UNIV. ADA	MUTAGENISTIC TESTING OF INDUSTRIAL WASTES FROM PEPRESENTATIVES OF THE ORGANIC CHEMICAL INDUSTRIES	STINNETT, SUSAN	80655701	NEW	79/03/27	$20,988
LANGSTON UNIV. LANGSTON	RECLAMATION OF HEAVY METAL CONTAMINATED SOILS	FRANKS, W.	80432303	CONT	79/01/22	$55,000
OKLAHOMA STATE UNIV. STILLWATER	PROJECT TO DEVELOP AND EVALUATE AN ENVRN. TECH. TRANSFER SYSTEM	FITE, R.	80484702	INCR	79/02/26	$18,066
OKLAHOMA, UNIV. OF NORMAN	DEVELOPMENT OF STUDY PLAN FOR GARBER-WELLINGTON AQUIFER	CANTER, L.	80656201	NEW	79/01/30	$46,442
** TRAINING **						
NATURAL RURAL WATER ASSOC. DUNCAN	STATE RURAL WATER TRAINING AND TECHNICAL ASSISTANCE PROGRAMS	MONTGOMERY, J.	90082601	INCR	78/10/11	$1,521,993

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
OREGON						
** RESEARCH **						
CLATSKANIE, CITY OF CLATSKANIE	JOINT DRY WET WEATHER TREATMENT OPTIMIZATION	WHEELER, R.	80600301	INCR	79/01/02	$50,000
OREGON GRAD. CTR. FOR STUDY & RES. BEAVERTON	THE CONTINUOUS MONITORING OF PARTICULATE SULFUR COMPOUNDS BY FLAME PHOTOMETRY	HUNTZICKER, JAMES J.	80475002	INCR	79/03/20	$35,000
OREGON STATE UNIV. CORVALLIS	MICROCOSM AND THEORETICAL EVALUATION OF SUBSTITUTE CHEMICALS	WARREN, C. E.	80462203	CONT	78/11/17	$50,000
OREGON STATE UNIV. CORVALLIS	BACTERIAL BIOASSAY FOR LEVEL ONE TOXICITY ASSESSMENT	WILLIAMSON, K.	80629701	NEW	79/03/20	$25,493
PORTLAND STATE UNIV. PORTLAND	AN INVESTIGATION OF THE REACTIONS OF AROMATIC HYDROCARBONS ON PHOTO CHEMICAL AIR POLLUTION	O BRIEN, R.	80476403	CONT	78/11/17	$60,000

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PENNSYLVANIA

APPLICANT / MUNICIPALITY	PROJECT DIRECTOR / FELLOW / TITLE	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
** RESEARCH **					
ALLEGHENY COLLEGE MEADVILLE	CHRISTIAN, W. EFFECT OF COLLISIONAL LIFETIME IN OPTOACOUSTIC DETERCTION OF POLLUTANT GASES	80643901	NEW	79/01/15	$1,785
CARNEGIE-MELLON UNIV. PITTSBURG	KEANE, J. PERFORMANCE OF ALTERNATE COATINGS IN THE ENVRN.	80502701	INCR	78/11/30	$25,000
CARNEGIE-MELLON UNIV. PITTSBURGH	LANE, LESTER HEALTH EFFECTS OF AIR POLLUTION ABATEMENT	80636501	INCR	78/12/13	$12,901
DREXEL UNIV. PHILADELPHIA	KOERNER, R. SPILL ALERT DEVICE FOR IMPOUNDED HAZARDOUS MATERIALS	80251103	INCR	79/02/26	$9,000
DREXEL UNIV. PHILADELPHIA	KOERNER, R. M. MICROWAVE SYSTEM FOR LOCATING FAULTS IN HAZARDOUS MATERIAL DIKES; PARAMETER SPECIFICATION	80476301	INCR	79/02/06	$12,081
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	RISBY, TERENCE CHEMICAL IONIZATION MASS SPECTROMETRY OF ORGANICS & ORGANOMETALLIC COMPOUNDS	80365102	INCR	79/03/12	$27,486
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	T. CARLSON ASPECTS OF MODELING URBAN AIR QUALITY	80564002	CONT	79/02/22	$57,509
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	PATTERSON, R. DEVELOPMENT AND TESTING OF METEOROLOGICAL MODELS SUITABLE FOR AIR QUALITY STUDIES	80565902	CONT	79/02/22	$91,603
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	HEINSOHN, R. SIMPLIFIED SAMPLING SYSTEMS	80573801	INCR	79/02/06	$5,927
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	BLACKADAR, A. BOUNDARY-LAYER MODEL IMPROVEMENT AND VALIDATION	80604801	INCR	79/03/27	$134,977

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		P E N N S Y L V A N I A				
** RESEARCH **						
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	EVALUATION OF CURRENT ENVIRONMENTAL RESEARCH AND ESTABLISHMENT OF PRIORITIES	V. HUNT	80688801	NEW	79/03/29	$221,267
PITTSBURGH, UNIV. OF PITTSBURGH	ION CHROMATOGRAPHY OF AROMATIC AMINES	FROHLIGER, J.	80529802	INCR	78/12/12	$35,090
PITTSBURGH, UNIV. OF PITTSBURGH	OHIO RIVER BASIN ENERGY STUDY (ORBES), PHASE II, YEAR 2	SHAPIRO, M. A.	80560802	CONT	78/11/21	$3,338
PITTSBURGH, UNIV. OF PITTSBURGH	ISOLATION, ANALYSIS AND TOXICITY OF ALGAL AND BACTERIAL ENDOTOXINS	SYKORA, JAN	80575402	CONT	79/02/28	$87,789
** DEMONSTRATION **						
ALLEGHENY CNTY. OF LOCAL GOVT. PITTSBURGH	NORTH PARK LAKE DREDGING	JOE BLATT	80688601	NEW	79/03/26	$169,488
NORTHERN TIER SOLID WASTE TOWANDA	DEMONSTRATION OF UNIQUE	BOYCE, R.	80688501	NEW	79/03/07	$750,000
** TRAINING **						
AMERICAL LAW INSTITUTE PHILADELPHIA	SUPPORT OF PUBLIC INTEREST ENVIRONMENTAL LAWYERS FOR TRAINING IN ENVIRONMENTAL LAW	MACLAY, D.	90094101	NEW	79/02/09	$25,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

R H O D E   I S L A N D

** RESEARCH **

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
RAYTHEON CO. PORTSMOUTH	DEVELOPMENT OF DYNAMIC TWO-LAYER MODEL FOR STRATIFIED ESTUARIES	WALSH, W.	80517001	INCR	79/02/26	$48,842
RHODE ISLAND, UNIV. OF NARRAGANSETT	ECOLOGICAL DAMAGE ASSESSMENT OF PETROLEUM DISCHARGES INTO MARINE ENV.	QUINN, J.	80547702	INCR	78/11/28	$19,089
RHODE ISLAND, UNIV. OF KINGSTON	MARINE ECOSYSTEMS RESEARCH LAB.	SCHNEIDER, E.	80607201	INCR	79/03/19	$2,823

** TRAINING **

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
SAVE THE BAY, INC. PROVIDENCE	DOCUMENTARY FILM ON NARRAGANSETT BAY	JOHN T. SCANLAN	90093801	NEW	79/03/01	$5,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	SOUTH CAROLINA					
** RESEARCH **						
BENEDICT COLLEGE COLUMBIA	EVALUATION OF THE FLAMELESS AND HYDRIDE GENERATION ATOMIC ABSORPTION METHODS FOR ASENIC AND SELENIUM	KINARD, JAMES	80523702	CONT	79/01/11	$34,307
SOUTH CAROLINA DEPT. OF HEALTH & ENVRN COLUMBIA	OVERLAND FLOW FOR TREATING DOMESTIC WASTEWATER AT EASLEY, SC	WATKINS, M.	80392902	CONT	78/11/06	$104,527

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
S O U T H D A K O T A						
** DEMONSTRATION **						
LAKE COUNTY CONSR, DIST, MADISON	LAKE HERMAN MODEL IMPLEMENTATION PROG. PROJECT	SPARTZ, VERN	80619301	NEW	78/12/04	$340,175

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

TENNESSEE

** RESEARCH **

VANDERBILT UNIV. NASHVILLE	WRITING BOOK ON TOXICOLOGY OF PESTICIDES	HAYES, W., JR.	80488503	CONT	78/12/04	$70,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

TEXAS

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
AUSTIN, CITY OF / AUSTIN	INVESTIGATION OF HYDROLOGIC AND OPERATIONAL CHARACTERISTICS OF PAVING SYSTEMS	GRAVES, C.	80633801	INCR	79/03/29	$65,000
BAYLOR COLLEGE OF MEDICINE / HOUSTON	DEVELOPMENT OF STD. METHODS FOR THE DETECTION OF ENTERIC VIRUSES IN RAW & TREATED POTABLE WATER	MELNICK, J.	80593301	INCR	79/01/22	$77,907
NORTH TEXAS STATE UNIV. / DENTON	LLE METHOD FOR ANALYSIS OF VOLATILE HALIDES IN DRINKING WATER	GLAZE, W.	80547202	CONT	78/11/06	$47,050
NORTH TEXAS STATE UNIV. / DENTON	PILOT SCALE EVALUATION OF BIOLOGICAL ACTIVATED CARBON FOR REMOVAL OF THM PRECURSORS	GLAZE, W.	80615701	INCR	79/03/12	$219,358
TEXAS A&M RES. FDN. / COLLEGE STATION	BACULOVIRUS PESTICIDES: IDENTIFICATION OF MARKERS FOR GENETIC STUDIES	SUMMERS, MAX	80594702	CONT	79/03/12	$85,000
TEXAS, STATE OF / AUSTIN	TEXAS LIGNITE DEVELOPMENT ENVIRONMENTAL ASSESSMENT AND RESEARCH PLAN	WHITE, D.	80635901	INCR	79/03/20	$10,000
TEXAS, UNIV OF / AUSTIN	DISSOLUTION OF CACO3 IN AQUEOUS SOLUTION	ROCHELLE, G.	80625101	NEW	79/02/26	$28,952
TEXAS, UNIV. OF / SAN ANTONIO	DEVELOPMENT OF FIELD VIRUS CONCENTRATION TECHNOLOGY	SORBER, C.	80447403	CONT	79/02/06	$28,003
TEXAS, UNIV. OF / GALVESTON	COMBINE TESTING PROTOCOL FOR DETECTING ENVRN. MUTAGENIC AGENTS	LEGATOR, M.	80462102	INCR	78/12/13	$40,785
TEXAS, UNIV. OF / GALVESTON	COMBINED TESTING PROTOCOL FOR DETECTING ENVIRONMENCOMBINED TESTING PROTOCOL FOR DETECTING ENVIRONMEN	LEGATOR, M.	80619401	NEW	79/03/22	$135,373

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

TEXAS

** RESEARCH **

TEXAS, UNIV. OF SAN ANTONIO	STUDY OF DENTAL EFFECTS IN A POPULATION EXPOSED TO WATER FLUORIDE LEVELS IN CRITICAL ZONE	SMITH, CHARLES	80623801	NEW	79/01/30	$167,885

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

U T A H

** RESEARCH **

UTAH STATE UNIV. LOGAN	REOVIRUSES IN WATER POLLUTION TESTING	SPENDLOVE, R.	80652701	NEW	79/03/12	$35,116

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		VERMONT				
** RESEARCH **						
VERMONT, UNIV. OF BURLINGTON	STUDIES OF WATERBORNE AGENT(S) OF VIRAL GASTROENTERITIES	DOLIN, R.	80654601	NEW	79/02/06	888,109

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	VIRGINIA					
** RESEARCH **						
AMERICAN INSTITUTE OF BIOLOGICAL SCI ARLINGTON	THIRD SYMPOSIUM IN AQUATIC POLLUTANTS	BEEM, D.	80666601	NEW	79/03/29	$15,000
MITRE CORP. MCLEAN	IDENTIFICATION OF TOXIC POLLUTANT DISCHARGES FOR UNIT PROCESSES	KING, J.	80562001	INCR	78/11/21	$50,000
			80562001	INCR	79/03/20	$100,000
VIRGINIA COMMONWEALTH UNIV. RICHMOND	EFFECTS OF SELECTED ORGANIC CONTAMINANTS IN DRINKING WATER ON THE FUNCTIONS OF REPRODUCTION	BORZELLECA, J.	80648101	NEW	79/01/22	$488,550
VIRGINIA POLY. INST. & STATE UNIV. BLACKSBURG	VENTILATORY RESPONSES OF FISH TO FLUCTUATING APPLICATIONS OF TOXICANTS	CAIRNS, J.	80527401	INCR	78/11/21	$49,995
** TRAINING **						
CITIZENS PROGRAM FOR CHESAPEAKE BAY BLACKBURG	PUBLIC PARTICIPATION & TRAINING PROCESS FOR WATER QUALITY PLANNING & MGMT.	AITON, EDWARD	90074801	INCR	79/03/13	$3,494
** FELLOWSHIPS **						
KNIGHT, T. BLACKSBURG	CIVIL ENGINEERING	VIRGINIA POLY. INST. &	91133201	NEW	79/03/29	$2,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	WASHINGTON					
** RESEARCH **						
FRED HUTCHINSON CANCER RES. SEATTLE	CANCER INCIDENCE IN RELATION TO ASBESTOS IN DRINKING WATER	LINCOLN, POLISSAR	80584601	INCR	79/01/08	$17,581
WASHINGTON STATE UNIV. PULLMAN	RURAL OXIDANT STUDIES & THE ROLE OF NOX IN RURAL OXIDANT FORMATION	WESTBERG, HAL	80534302	INCR	79/01/02	$50,000
WASHINGTON, UNIV. OF SEATTLE	PRESENCE OF PRIORITY POLLUTANTS IN SEWAGE AND THEIR REMOVAL IN SEWAGE TREATMENT PLANTS	DEWALLE, F.	80610201	INCR	79/03/12	$66,522
WASHINGTON, UNIV. OF SEATTLE	REMOVAL OF GIARDIA LAMBLIA CYSTS IN DRINKING WATER PLANTS	DEWALLE, F.	80612701	INCR	79/03/27	$100,000
WASHINGTON, UNIV. OF SEATTLE	ECOLOGICAL EFFECTS OF STORM RUNOFF IN AN URBAN STREAM	PERKINS, M.	80638701	NEW	78/11/06	$61,973
** DEMONSTRATION **						
KENT, CITY OF KENT	LAKE FENWICK RESTORATION	WILSON, BARNEY	80604301	NEW	78/12/28	$88,750
TACOMA METRO. PARK DIS. TACOMA	WAPATO LAKE RESTORATION	GLUNDBERG, W.	80610101	NEW	79/01/30	$91,550

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	WEST VIRGINIA					
** RESEARCH **						
WEST VIRGINIA UNIV. MORGANTOWN	OHIO RIVER BASIN ENERGY STUDY	PAUL V. MORGONTOWN	80558502	CONT	78/11/06	$126,237
WEST VIRGINIA UNIV. MORGANTOWN	IMPLEMENTATION, OPERATION AND MAINTENANCE OF THE SMALL WASTEWATER FLOWS CLEARINGHOUSE PHASE II	ALDRIDGE, D.	80652501	NEW	79/01/11	$224,789

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

W I S C O N S I N

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
MADISON, CITY OF / MADISON	TEST FIRING RDF IN AN INDUSTRIAL COAL-FIRED BOILER	BOLEY, G.	80632801	INCR	79/03/20	$289,000
WISCONSIN, UNIV. OF / MADISON	SOCIO-ECONOMIC IMPACT ON LAKE IMPROVEMENT PROJECTS AT MIRROR/SHADOW LAKES & WHITE CLAY LAKE	KLESSIG, L.	80480201	INCR	79/01/15	$10,000
WISCONSIN, UNIV. OF / MADISON	ECOLOGICAL BIOLOGICAL EFFECTS AND INTERACTIONS OF PESTICIDES IN A SOIL/PLANT/WATER/MICROCOSM	LICHTENSTEIN, E.	80492003	CONT	78/10/25	$83,662
WISCONSIN, UNIV. OF / SUPERIOR	ESTIMATES OF NO EFFECT CONCENTRATIONS OF SELECTED PESTICIDES IN FRESHWATER ORGANISMS	CALL, DANIEL	80686401	INCR	79/02/06	$28,633
WISCONSIN, UNIV. OF / MADISON	COAL FIRED STEAM PLANTS: HUMAN AND EVIRONMENTAL EXPOSURE TO AIR AND WATER POLLUTANTS	CHESTERS, G.	80687801	INCR	79/03/13	$430,456

** DEMONSTRATION **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
WISCONSIN DEPT. OF NATURAL RESOURCES / MADISON	LILLY LAKE PROTECTION & REHABILITATION PROJECT EVALUATION	VOIGT, L. P.	80423501	INCR	78/12/13	$79,000
WISCONSIN DEPT. OF NATURAL RESOURCES / MADISON	WHITE CLAY LAKE PROTECTION & REHABILITATION PROJECT EVALUATION	VOIGHT, L. P.	80423801	INCR	79/03/19	$36,000
WISCONSIN DEPT. OF NATURAL RESOURCES / MADISON	LAKE DEBORAH REHABILITATION	EARL, A.	80576901	NEW	78/11/21	$252,000

** FELLOWSHIPS **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
ADAMSKI, W. / MADISON	METEOROLOGY	WISCONSIN, UNIV. OF	91121201	INCR	79/02/06	$172

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	FOREIGN COUNTRIES ENGLAND					
** RESEARCH **						
INTERNATIONAL COMM. ON RAD. PROT. SUTTON	ICRP MEETINGS	SOWBY, F.	80644001	NEW	79/03/27	$5,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD

FOREIGN COUNTRIES
FRANCE

** RESEARCH **

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
CENTRE NUCLEAIRES DE FONTENSAY AUX ROS PARIS	SIMULTANEOUS COMPARISON OF THE EAA & THE DIFFUSION BATTERY FOR THE ATMOSPHERIC AEROSOL	BRICARD, JEAN	80437001	INCR	79/03/01	$10,000
ORGANIZATION FOR ECO COOP & DEVEL PARIS	SPECIAL PROGRAM ON THE CONTROL OF CHEMICALS FOR THE FINANCIAL PERIOD	H. SALZMAN	80688001	NEW	79/03/12	$167,000

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U.S. ENVIRONM AL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA Grant No. 802309
(Formerly 11010 HIR)-Amendment

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT
"Lake Restoration by Phosphorus Control"

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Project Director
Mr. Ernest J. Peternel, City Clerk-Treasurer
City of Ely - City Hall
Ely, Minnesota 55731

NAME AND ADDRESS OF APPLICANT INSTITUTION

City of Ely
City Hall
Ely, Minnesota 55731

GA

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

1. The primary objective of this project is to restore Shagawa Lake bordering the City of Ely, Minnesota from a highly eutrophic condition to a healthy state.

2. To accomplish the above objective, it was determined to be necessary to substantially upgrade the quality of and to remove essentially all phosphorus from the City of Ely's high-rate trickling filter plant effluent. This effluent constitutes virtually a point source of phosphorus discharge into the lake. A 1.5 mgd tertiary treatment plant has been constructed to further treat the trickling filter effluent. Tertiary facilities consist of flow equilization, two-stage lime clarification; dual-media filtration, and chlorination. Lime sludge is mixed with digested sludge from the trickling filter plant and disposed of via gravity thickening, vacuum filtration, and trucking to sanitary landfill. The concentration of phosphorus being sought in the tertiary effluent is 0.05 mg/l as P, or less.

3. In April 1973, three years of carefully-controlled operation (using EPA and City personnel) was started, during which time, it is hoped the restoration of Shagawa Lake can be demonstrated. After 18 months of operation, it has been shown that the residual phosphorus objective of 0.05 mg/l as P can be routinely achieved.

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*PROJECT: 004717-EVALUATION AND TECHNOLOGY TRANSFER OF THE SWIRL CONCENTRATOR PRINCIPLE

                    STARTING/ COMPLETION DATE : 01/75 - 02/80 :   FY79
                    TASK CODE=C822A-S1T035 **EPA=R803157     ** (GRANT)
  EPA  OFFICER.: H  MASTERS               EPA/MERL - CINC                  201-321-6678
  INVESTIGATOR.: RH SULLIVAN              AMERICAN PUBLIC WORKS ASSN
  MILESTONES...: 07/76 -SWIRL DEGRITTER EVALUATION COMPLETE
                 10/76 -SWIRL PRIMARY SEPARATOR EVALUATION COMPLETE
                 15/77 -FINAL REPORT (DEGRITTER)
                 10/77 -START OPTIMIZATION WORK AND DEVELOPMENT OF TEXTBOOK
                 08/79 -OPTIMIZATION WORK COMPLETED
                 09/79 -TEXTBROOK DRAFT COMPLETED
                 02/80 -SWIRL DESIGN TEXTBOOK
  PROGRAM ID...: (PE-822 )   ,    POINT SOURCE TECH DEV (WASTEWATER SYS)
  FINAL OUTPUT.: SWIRL DESIGN TEXTBOOK
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
  CURR. RESULTS: FIELD PROTOTYPE DEMONSTATION OF SWIRL DEGRITTER
                 THE SWIRL PRIMARY SEPARATOR - DEVELOPMENT AND
                 PILOT DEMONSTRATION. 2 EPA REPORTS.
  ORDIS CODES..: RECN-004717          SSIE-GMA  6009      EPA -R803157        TASK-C822A-S1T035
                 ORD -RC10B30-1079    MAND-10-01          PE  -822
                                      LABT-EET

  PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH   DATA-UPDATED        UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
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ABSTRACT.....: THE OVERALL OBJECTIVE OF THIS DEMONSTRATION PROJECT IS TO PROVIDE VEHICLES FOR THE RAPID DISSEMINATION OF INFORMATION CONCERNING THE SWIRL CONCENTRATOR AND THE HELICAL BEND REGULATOR. TECHNOLOGY TRANSFER IN THE FIELD OF PUBLIC WORKS IS BEST ACCOMPLISHED BY EVALUATION OF PROTOTYPE OR FULL-SIZE UNITS AND BY CONTACT WITH THE ENGINEERS WHO MUST PLAN AND DESIGN POLLUTION CONTROL FACILITIES. THE FOUR PARTS OF THIS PROPOSAL ARE DESIGNED TO PROVIDE THE BASIS FOR TRANSFER OF THE TECHNOLOGY TO THE PROFESSION. THE FOUR PARTS ARE: A. EVALUATION OF A SWIRL CONCENTRATOR GRIT CHAMBER; B. EVALUATION OF A SWIRL CONCENTRATOR PRIMARY TECHNICAL DEVICE; C. PREPARATION OF A TEXTBOOK ON DESIGN OF FACILITIES UTILIZING SECONDARY MOTIONS; D. OPTIMIZE, THROUGH LABORATORY CONFIRMATION, THE SWIRL DESIGN CURVES TO COVER SMALLER TREATMENT INFLOW CAPACITIES THAN NOW EXISTS. RESULTS TO DATE: 1. EPA-600/2-77-185, "FIELD PROTOTYPE DEMONSTRATION OF THE SWIRL DEGRITTER": 2. EPA-600/2-78-122, "THE SWIRL PRIMARY SEPARATOR - DEVELOPMENT AND PILOT DEMONSTRATION."

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*PROJECT: 001008-HEALTH RISKS OF HUMAN EXPOSURE TO WASTEWATERS

STARTING/ COMPLETION DATE : 04/75 - 04/79 : FY78
TASK CODE=D607A-003 **EPA=R803643-03 ** (GRANT)

EPA OFFICER.: W JAKABOWSKI — EPA/HERL - CINC
INVESTIGATOR.: JP PHAIR — NORTHWESTERN UNIV — SCH OF MED
GL VANMEER — UNIV OF CINCINNATI — CIV & ENV ENG DEPT
MILESTONES...: 04/76 -ANNUAL REPORT
04/77 -ANNUAL REPORT
04/78 -ANNUAL REPORT
04/79 -FINAL REPORT
PROGRAM ID...: (PE-607) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 MICROBIOLOGY, EPIDEMIOLOGY
CURR. RESULTS: VOLUNTEERS RECRUITED AND OVER 400 VOL. ACTIVE NOW.

ORDIS CODES..:			
RECN-001008	SSIE-GMA 5381	EPA -R803643-03	TASK-D607A-003
ORD -RD10B30-5078	MAND-10-01	MAND-30-99	
PE -607		LABT-OHR	

PROJ STATUS..: PROJECT-ACTIVE — CATEGORY-RESEARCH — DATA-ORIGINAL — UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: THE PROPOSED WORK INVOLVES THE FOURTH AND FINAL YEAR OF AN ON-GOING PROSPECTIVE SEROLOGIC-EPIDEMIOLOGIC STUDY OF PERSONS OCCUPATIONALLY EXPOSED TO MUNICIPAL WASTEWATER. THE INITIAL OBJECTIVE OF THIS STUDY WAS TO DETERMINE THE SENSITIVITY OF THE METHODOLOGY FOR APPRAISING THE HEALTH EFFECTS OF HUMAN EXPOSURE TO WASTEWATER. VOLUNTEERS FOR THE STUDY WERE MUNICIPAL EMPLOYEES IN CINCINNATI, OH. ENGAGED IN SEWER MAINTENANCE AND HIGHWAY MAINTENANCE WORK. DURING THE SECOND YEAR OF THE STUDY THE PROJECT WAS EXPANDED WITH THE ADDED OBJECTIVE OF DETERMINING THE HEALTH EFFECTS ASSOCIATED WITH OCCUPATIONAL EXPOSURE TO VIABLE AEROSOLS GENERATED BY ACTIVATED SLUDGE WASTEWATER TREATMENT PLANTS. VOLUNTEERS FOR THIS ASPECT OF THE STUDY HAVE BEEN RECRUITED FROM CINCINNATI, OHIO, CHICAGO, ILL. AND MEMPHIS, TENN. THE CONTROL GROUPS ARE WATER TREATMENT PLANT EMPLOYEES IN CHICAGO, ELECTRICAL DISTRIBUTION SYSTEMS WORKERS IN MEMPHIS, AND THE PREVIOUSLY RECRUITED HIGHWAY MAINTENANCE WORKERS IN CINCINNATI. A TOTAL OF OVER 400 VOLUNTEERS ARE CURRENTLY ACTIVE IN THE STUDY OVER 100 OF WHOM WERE RECRUITED AT THE TIME OF INITIAL EMPLOYMENT AT ACTIVATED SLUDGE WASTEWATER TREATMENT PLANTS. THE PROTOCOL INVOLVES: QUARTERLY COLLECTION OF SERA FOR IMMUNOLOGIC, VIROLOGIC AND BACTERIOLOGIC EXAMINATIONS, PHARYNGEAL SWABS AND RECTAL SWABS; YEARLY MULTIPHASIC AND PHYSICAL EXAMINATIONS; HEALTH DIARIES; EVALUATION OF SICKNESS AND ABSENTEEISM REPORTS; WORK OBSERVATIONS; SELECTED FOLLOW-UP OF WORKER FAMILIES; AND ENVIRONMENTAL MONITORING. THE MONITORING PROGRAM INCLUDES AIRBORNE-BACTERIAL ANALYSES AND VIRAL AND BACTERIAL ANALYSES OF WASTEWATER. WORKERS ARE MAINTAINED IN THE STUDY FOR A MINIMUM OF 12 MONTHS IF POSSIBLE. ABOUT 35 TESTS ARE INCLUDED IN THE VIRAL SEROLOGIC SURVEY. RESULTS ARE STATISTICALLY EVALUATED

*PROJECT: 002155-CHEMICAL IONIZATION MASS SPECTROMETRY OF ORGANICS AND ORGANOMETALLIC COMPOUNDS
STARTING/ COMPLETION DATE : 07/75 - 04/79 : FY79
TASK CODE=G712B-BC-037 **EPA=R803651-02S3** (GRANT)

EPA OFFICER..: J SIGSBY EPA/ESRL - RTP 919-541-3037
INVESTIGATOR..: TH RISBY DEPT. OF CHEMISTRY PENNSYLVANIA STATE UNIVERSITY
MILESTONES....: 04/79 -PROJECT COMPLETED
PROGRAM ID....: (PE-712) CHARAC. & MEASUREMENT METHODS DEVELOPMENT
MANDATE.......: 10-02 CLEAN AIR ACT
CURR. RESULTS: TECHNIQUES FOR EACH OF TYPES OF ANALYSIS DEVELOPED. THESE TECHNIQUES APPLIED TO MOBILE SOURCE EMISSIONS ANALYSIS.

ORDIS CODES...: RECN-002155 SSIE-GMA 4469 2 EPA -R803651-02S3 TASK-G712B-BC-037
ORD -RG10B30-1079 MAND-10-02 PE -712
LABT-EPE

PROJ STATUS...: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT......: OBJECTIVE: A MULTI-PART STUDY WHICH WOULD DETERMINE POSSIBLE APPLICATIONS OF POSITIVE AND NEGATIVE CHEMICAL IONIZATION MASS SPECTROMETRY TO MOBILE SOURCE ANALYSIS AND THEN TO APPLY IT TO THE ANALYSIS OF DIESEL PARTICULATE. APPROACH: A WIDE RANGE OF APPLICATIONS ARE SURVEYED FROM THE ANALYSIS OF LANTHANIDE AND NOBLE METALS; OTHER METALLIC AND NON-METALLIC COMPOUNDS SUCH AS NICKEL CARBONYL AND SULFURIC ACID; AND WIDE RANGE ORGANIC MATERIALS. RESULTS TO DATE: TECHNIQUES FOR EACH OF THE TYPES OF ANALYSIS; METAL, GASES, INORGANICS AND ORGANICS WERE DEVELOPED. THESE TECHNIQUES ARE APPLIED TO MOBILE SOURCE EMISSION ANALYSIS.

*PROJECT: 000350-WATER QUALITY HYDROLOGY AFFECTED BY OIL SHALE DEVELOPMENT

STARTING/ COMPLETION DATE : 06/76 - 06/80 : FY79
TASK CODE=B623B-361 **EPA=R803684-03 ** (GRANT)

EPA OFFICER.: EF HARRIS — EPA/IERL - CINC — 513-684-4417
INVESTIGATOR.: DB MCWHORTER — COLORADO STATE UNIV — AGRIC ENG DEPT
RC WARD — COLORADO STATE UNIV — AGRIC ENG DEPT
GV SKOGERBOE — COLORADO STATE UNIV — AGRIC ENG DEPT

MILESTONES...: 06/80 -FINAL REPORT RECEIVED
PROGRAM ID...: (PE-623) EXTRACTION AND PROCESSING TECHNOLOGY
MANDATE......: 30-99 HYDROLOGY
CURR. RESULTS: SURFACE WATER SAMPLES OBTAINED FROM USBM, TOSCO II, AND PARAPHO SPENT SHALE PLOTS. LEACHATE STUDIES ON PARAHO SPENT SHALE IN PROGRESS. DATA AVAILABLE IN LITERATURE REVIEWED AND SUMMARIZED.

ORDIS CODES..: RECN-000350 — SSIE-GMA 5090 1 — EPA -R803684-03 — TASK-B623B-361
ORD -RB10B30-3079 — MAND-30-99 — PE -623
LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE OBJECTIVES ARE TO COLLECT AND ANALYZE ALL AVAILABLE DATA PERTINENT TO THE INFLUENCE OF OIL SHALE DEVELOPMENT ON WATER QUALITY HYDROLOGY, AND TO CARRY OUT AN IN-DEPTH INVESTIGATION INTO LOCAL WATER QUALITY ASPECTS ASSOCIATED WITH MINE SPOILS AND SHALE RESIDUE. APPROACH: 1) TO GATHER ALL DATA PERTINENT, 2) TO SUMMARIZE AND ANALYZE THE DATA TOWARD THE IDENTIFICATION OF DATA DEFICIENCIES, AND 3) TO DEVELOP PROCEDURES FOR QUANTITATIVE ASSESSMENT OF THE QUANTITY AND QUALITY OF SURFACE AND SUBSURFACE RUNOFF FROM PROCESSED SHALE RESIDUE AND MINE SPOILS. RESULTS TO DATE: SURFACE WATER SAMPLES HAVE BEEN OBTAINED FROM USBM, TOSCO II, AND PARAHO SPENT SHALE PLOTS. LEACHATE STUDIES ON PARAHO SPENT SHALE ARE IN PROGRESS. DATA AVAILABLE IN THE LITERATURE HAVE BEEN REVIEWED AND SUMMARIZED.

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*PROJECT: 000014-DEVELOPMENT OF METHODS FOR QUANTITATION OF ADSORBED VIRUSES IN WASTE AND OTHER WATER

STARTING/ COMPLETION DATE : 07/77 - UNK : FY78
TASK CODE=A612 -40 **EPA=R803774-03 ** (GRANT)

EPA OFFICER.: - UNKNOWN EPA/EMSL - CINC
INVESTIGATOR.: JE SMITH SYRACUSE UNIV SCH OF ARTS & SCI
MILESTONES...: 10/77 -INTERIM REPORT
12/78 -FINAL REPORT
PROGRAM ID...: (PE-612) MEASUREMENT TECHNIQUES AND EQUIPMENT STANDARDIZATION
ORDIS CODES..: RECN-000014 SSIE-GMA 4556 EPA -R803774-03 TASK-A612 -40
ORD -RA10B30-4078 PE -612
PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: THIS IS ONE OF A MULTI-PART PROJECT WHOSE SUMMARY MAY BE IDENTICAL TO OTHERS. THE STUDY IS DESIGNED TO IDENTIFY ELEMENTS IN ACTIVATED SLUDGE SOLIDS AND ANAEROBIC DIGESTER SLUDGE WHICH REMOVE OR KILL VIRUSES DURING WASTE TREATMENT. EFFORTS ARE MADE TO IMPROVE THE TECHNOLOGY FOR RECOVERING AND ASSAYING SLUDGE-ADSORBED VIRUSES. PRESENT WORK EMPLOYED VIABLE POLIOVIRUS 1 (SABIN) LABELLED WITH 125I AS A TRACER AND DEMONSTRATED THE FOLLOWING: (1) 95 TO 99.9 PERCENT OF VIRUS LABEL WAS REMOVED BY CELL FLOCS AND CELL-FREE EXOPOLYMERS OF FOUR ZOOGLOEA RAMIGERA STRAINS WHICH HAD BEEN ISOLATED AT TREATMENT PLANTS. (2) METAL CATIONS MEDIATED POLIOVIRUS ADSORPTION, INCLUDING AL, FE 3 ION, MG, HG AND PB, BUT NOT CA OR ZN. (3) VIRUS WAS ELUTED INSTANTLY FROM ZOOGLEA CELLS AND EXOPOLYMERS BY 0.05 M GLYCINE, PH 11.5 AND MORE SLOWLY BY FETAL CALF SERUM, PH 9.0. (4) VIRUS WAS ADSORBED BY MIXED EXOPOLYMERS EXTRACTED FROM THE ZOOGLEAL FLOCS IN ACTIVATED SLUDGE AND FROM ANAEROBIC SLUDGE MICROBES. (5) COLPIDIUM SP., PARAMECIUM CAUDATUM AND MIXED CILIATES FROM ACTIVATED SLUDGE BECAME RADIOACTIVE AFTER GRAZING ON Z. RAMIGERA STRAINS WHICH HAD ADSORBED 125I-POLIOVIRUS; THE LABEL WAS SHED WITHIN 6 HRS AFTER FEEDING. (6) SUCROSE GRADIENTS OF ACTIVATED SLUDGE SOLIDS SHOWED THAT MOST OF THE VIRUS ADSORBED BY SLUDGE WAS ASSOCIATED WITH THE MICROBIAL FRACTIONS. (7) POLYHYDROXYBUTYRATE GRANULES (WHICH ARE TRAPPED NORMALLY WITHIN Z. RAMIGERA FLOCS) ADSORBED VIRUS AVIDLY BUT EVIDENCE SUGGESTED THESE WERE NOT RESPONSIBLE FOR SIGNIFICANT REMOVAL OF VIRUSES FROM ACTIVATED SLUDGE.

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*PROJECT: 004346-DEVELOPMENT OF METHODS FOR QUANTITATION OF ADSORBED VIRUSES IN WASTE AND
                 OTHER WATER
                     STARTING/ COMPLETION DATE : 07/75 - 12/79 :   FY79
                     TASK CODE=A884 -28     **EPA=R803774-03  ** (GRANT)
  EPA  OFFICER.: R  SAFFERMAN               EPA/EMSL - CINC                   513-684-7334
  INVESTIGATOR.: JE SMITH                   SYRACUSE UNIV                     SCH OF ARTS & SCI
  MILESTONES...: 11/79 -DATA ON THE DISPOS. OF VIRUSES ADSORBED TO SLUDGE AND SEWAGE SOLIDS
                 12/79 -FINAL REPORT
  PROGRAM ID...: (PE-884 )         MEASUREMENT, TECHNIQUES & EQUIP DEV
  FINAL OUTPUT.: DATA ON DISPOSITION OF VIRUSES ADSORBED TO SLUDGE
                 AND SEWAGE SOLIDS.
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
                 10-15     SAFE DRINKING WATER ACT
                 20-11     DAA FOR WATER PLANNING AND STANDARDS
                 20-13     DAA FOR DRINKING WATER
                 30-99     VIROLOGY METHODS
  CURR. RESULTS: 95 TO 99.9% VIRUS LABEL REMOVED BY CELL FLOCS AND CELL
                 FREE EXOPOLYMERS; METAL CATIONS MEDIATED POLIOVIRUS
                 ADSORPTION; VIRUS ELUTED FROM ZOOGLOEA CELLS AND
                 EXOPOLYMERS BY 0.05 M GLYCINE, PH 11.5; VIRUS ADSORBED
                 BY MIXED EXOPOLYMERS EXTRACTED FROM ZOOGLEAL FLOCS AND
                 ANAEROBIC SLUDGE MICROBES.
  ORDIS CODES..: RECN-004346         SSIE-GMA  5622        EPA -R803774-03      TASK-A884 -28
                 ORD -RA10B30-5079   LABN-A713C-28         MAND-10-01
                 MAND-10-15          MAND-20-11            MAND-20-13           MAND-30-99
                 PE  -884                                  LABT-MTS
  PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-UPDATED         UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE STUDY IS DESIGNED TO FURTHER DEVELOP AND ASSESS METHODS FOR RECOVERING AND ASSAYING VIRUSES FROM SLUDGE SOLIDS. IT WILL ADDRESS ITSELF TO DETERMINING THE FATE OF WATER-BORNE VIRUSES THAT HAVE BEEN ADDED TO SOLIDS AND TO DETERMINE THOSE FRACTIONS FROM THE SOLIDS WHICH ARE RESPONSIBLE FOR BOTH REVERSIBLE AND IRREVERSIBLE BINDING OF VIRUSES. APPROACH: TEST SYSTEMS WILL BE DEVISED TO IDENTIFY ELEMENTS IN SLUDGE AND SEWAGE SOLIDS THAT EFFECT THE REMOVAL OR DESTRUCTION OF VIRUSES. THIS WILL INCLUDE EXPLORING THE POSSIBILITY THAT VIRUS INACTIVATION DUE TO IRREVERSIBLE ADSORPTION IS THE RESULT OF MECHANISMS OTHER THAN ADSORPTION ALONE. RESULTS TO DATE: PRESENT WORK EMPLOYED POLIOVIRUS AND SHOWED THE FOLLOWING: 1. 95 TO 99.9% OF VIRUS LABEL WAS REMOVED BY CELL FLOCS AND CELL-FREE EXOPOLYMERS OF FOUR ZOOGLOEA RAMIGERA STRAINS WHICH HAD BEEN ISOLATED AT TREATMENT PLANTS. 2. METAL CATIONS MEDIATED POLIOVIRUS ADSORPTION. 3. VIRUS WAS ELUTED INSTANTLY FROM ZOOGLOEA CELLS AND EXOPOLYMERS EXTRACTED FROM THE ZOOGLEAL FLOCS IN ACTIVATED SLUDGE AND FROM ANAEROBIC SLUDGE MICROBES.

*PROJECT: 001877-FORMATION OF ATMOSPHERIC AEROSOLS

STARTING/ COMPLETION DATE : 05/77 - 04/79 : FY78
TASK CODE=G603A-AH-03 **EPA=R803851-03 ** (GRANT)

EPA OFFICER..: WE WILSON EPA/ESRL - RTP
INVESTIGATOR.: KT WHITBY UNIV OF MINNESOTA DEPT OF MECH ENG
MILESTONES...: 04/79 -COMPLETE DATA ANALYSIS
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
MANDATE......: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001877 SSIE-GMA 2528 3 EPA -R803851-03 TASK-G603A-AH-03
ORD -RG10B30-1078 LABN-G603A-AC-07 MAND-10-02
PE -603 LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: AEROSOL SIZE DISTRIBUTIONS HAVE BEEN MEASURED IN THE ST. LOUIS AREA AS PART OF EPA'S PROJECT MISTT USING AIRCRAFT AND GROUND-BASED SELF-CONTAINED MOBILE LABORATORIES. THE UNIVERSITY OF MINNESOTA'S PORTION OF THE PROJECT INCLUDED AEROSOL MEASUREMENTS ABOARD AN AIRCRAFT AND THE OPERATION OF A MOBILE VAN ON THE GROUND UNDER THE PLUMES. THE PAST YEAR WAS DEVOTED PRIMARILY TO DATA ANALYSIS, THE DEVELOPMENT OF NEW ANALYSIS TECHNIQUES AND REPORTING RESULTS OF AEROSOLS DATA OBTAINED OVER THE PAST SEVERAL YEARS IN PROJECT MISTT AND THE ROADWAY AEROSOL STUDY. DURING THE COMING YEAR THE PARTICLE TECHNOLOGY LABORATORY OF THE UNIVERSITY OF MINNESOTA WILL BE MEASURING AEROSOL SIZE DISTRIBUTION FOR EPA'S PROJECT STATE (SULFUR TRANSPORT AND TRANSFORMATION IN THE ENVIRONMENT) IN TENNESSEE AND FOR EPA'S PROJECT SCRUB IN ALABAMA AND MINNESOTA. THE STATE PROGRAM IS DIRECTED TO DESCRIBING REACTIONS AND ATMOSPHERIC PROCESSES AFFECTING PLUME BEHAVIOR OVER TIME SCALES OF 12-96 HOURS AND DISTANCES OUT TO 1000 KM. BY CONTRAST THE SCRIB PROGRAM WILL PROVIDE AN ASSESSMENT OF THE TRANSPORT AND TRANSFORMATION OCCURRING WITHIN A POWER PLANT PLUME WITH AN SO2 SCRUBBER OUT TO DISTANCES OF ABOUT 1000 KM AND TRAVEL TIMES MOSTLY LESS THAN 12 HOURS. RESOURCES WILL BE PROVIDED TO COMPLETE DATA ANALYSIS AND REPORT ON PROJECT MISTT AND TO PARTICIPATE IN THE PLANNING OF PROJECT SCRUB AND THE SUBSEQUENT DATA ANALYSIS. OTHER TASKS INCLUDE THE MEASUREMENT OF GASEOUS AND AEROSOL POLLUTANTS UNDER AND IN PLUMES BEING CHARACTERIZED IN PROJECT STATE AND DEVELOPMENT OF AN AEROSOL MOBILITY CHROMATOGRAPH TO DETERMINE MOLECULAR COMPOSITION OF SULFUR CONTAINING AEROSOLS.

*PROJECT: 001932-FORMATION OF ATMOSPHERIC AEROSOLS

STARTING/ COMPLETION DATE : 07/75 - 04/79 : FY79
TASK CODE=G603A-AC-007 **EPA=R803851-03 ** (GRANT)

EPA OFFICER.:	WE WILSON	EPA/ESRL - RTP		919-541-2551
INVESTIGATOR.:	KT WHITBY	UNIV OF MINNESOTA		DEPT OF MECH ENG
PROGRAM ID...:	(PE-603)	HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS		
MANDATE......:	10-02 CLEAN AIR ACT			
ORDIS CODES..:	RECN-001932	SSIE-GMA 3942 2	EPA -R803851-03	TASK-G603A-AC-007
	ORD -RG10B30-1079	LABN-G625B-EA-08	MAND-10-02	
	PE -603		LABT-EPE	
PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH ACCESS-PUBLIC	DATA-BEING UPDATED	UPDATED- OCT-DEC 79

ABSTRACT.....: AEROSOL SIZE DISTRIBUTIONS HAVE BEEN MEASURED IN THE ST. LOUIS AREA AS PART OF EPA'S PROJECT MISTT USING AIRCRAFT AND GROUND-BASED, SELF-CONTAINED MOBILE LABORATORIES. THE UNIVERSITY OF MINNESOTA'S PORTION OF THE PROJECT INCLUDED AEROSOL MEASUREMENTS ABOARD AN AIRCRAFT AND THE OPERATION OF A MOBILE VAN ON THE GROUND UNDER THE PLUMES. THE PAST YEAR WAS DEVOTED PRIMARILY TO DATA ANALYSIS, THE DEVELOPMENT OF NEW ANALYSIS TECHNIQUES AND REPORTING RESULTS OF AEROSOL DATA OBTAINED OVER THE PAST SEVERAL YEARS IN PROJECT MISTT AND THE ROADWAY AEROSOL STUDY. DURING THE COMING YEAR THE PARTICLE TECHNOLOGY LABORATORY OF THE UNIVERSITY OF MINNESOTA WILL BE MEASURING AEROSOL SIZE DISTRIBUTIONS FOR EPA'S PROJECT STATE (SULFUR TRANSPORT AND TRANSFORMATION IN THE ENVIRONMENT) IN TENNESSEE AND FOR EPA'S PROJECT SCRUB IN ALABAMA AND MINNESOTA. THE STATE PROGRAM IS DIRECTED TO DESCRIBING REACTIONS AND ATMOSPHERIC PROCESSES AFFECTING PLUME BEHAVIOR OVER TIME SCALES OF 12-96 HOURS AND DISTANCES OUT TO 1000 KM. BY CONTRAST THE SCRUB PROGRAM WILL PROVIDE AN ASSESSMENT OF THE TRANSPORT AND TRANSFORMATION OCCURRING WITHIN A POWER PLANT PLUME WITH AN SO2 SCRUBBER OUT TO DISTANCES OF ABOUT 1000 KM AND TRAVEL TIMES MOSTLY LESS THAN 12 HOURS. RESOURCES WILL BE PROVIDED TO COMPLETE DATA ANALYSIS AND REPORT ON PROJECT MISTT AND TO PARTICIPATE IN THE PLANNING OF PROJECT SCRUB AND THE SUBSEQUENT DATA ANALYSIS. OTHER TASKS INCLUDE THE MEASUREMENT OF GASEOUS AND AEROSOL POLLUTANTS UNDER AND IN PLUMES BEING CHARACTERIZED IN PROJECT STATE AND DEVELOPMENT OF AN AEROSOL MOBILITY CHROMATOGRAPH TO DETERMINE MOLECULAR COMPOSITION OF SULFUR-CONTAINING AEROSOLS.

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*PROJECT: 003840-EFFECTS OF THERMAL ADDITIONS ON THE DYNAMICS OF FOULING COMMUNITIES AT
                 BEAUFORT, NC
                      STARTING/ COMPLETION DATE : 12/75 - 12/79 :    FY79
                      TASK CODE=P625A-01     **EPA=R803856-03  ** (GRANT)
  EPA  OFFICER.: DC MILLER                  EPA/ERL - NARR                        401-789-1071
  INVESTIGATOR.: WW KIRBYSMITH              DUKE UNIV                             MARINE LAB
                 JP SUTHERLAND              DUKE UNIV                             MARINE LAB
  MILESTONES...: 12/79 -PROJECT COMPLETION DATE, FINAL REPORT DUE
  PROGRAM ID...: (PE-625 )           HEALTH AND ECOLOGICAL EFFECTS
  FINAL OUTPUT.: PROJECT COMPLETION DATE, FINAL REPORT DUE
  MANDATE......: 10-01      FEDERAL WATER POLLUTION CONTROL ACT
                 10-02      CLEAN AIR ACT
                 10-13      SOLID WASTE DISPOSAL ACT
                 20-62      DAA FOR ENVIRONMENTAL ENGIN. AND TECHNOLOGY
  ORDIS CODES..: RECN-003840           SSIE-GMA  4249 2      EPA -R803856-03       TASK-P625A-01
                 ORD -RP10B31-5079     MAND-10-01            MAND-10-02
                 MAND-10-13            MAND-20-62            PE  -625
                 LABT-EPE
  PROJ STATUS..: ACTIVE -MULTIYEAR     CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  JUL-SEP 79
                                       ACCESS-PUBLIC
  COMMENT......: FY=79,RC=P,AH=RD,PE=831,$00070000
  ABSTRACT.....: FUNDS ARE REQUESTED FOR THE CONSTRUCTION OF A LABORATORY SYSTEM WHICH WILL PROVIDE RUNNING SEAWATER
                  AT AMBIENT TEMPERATURE AND AT 2 DEGREES C, 4 DEGREES C, AND 8 DEGREES C ABOVE AMBIENT. FOULING
                  DEVELOPMENT AND CHANGES IN FOULING COMMUNITY STRUCTURE WILL BE FOLLOWED AT EACH TEMPERATURE FOR
                  SEVERAL YEARS ON CLAY TILE PLATES (232 SQ. CM) SUBMERGED IN OCTOBER 1975 AND APRIL 1976. LARVAL
                  RECRUITMENT AT EACH TEMPERATURE WILL ALSO BE MONITORED. PARALLEL EXPERIMENTS WILL BE CONDUCTED
                  SIMULTANEOUSLY ON PLATES SUBMERGED UNDER THE DUKE MARINE LAB DOCK. DATA WILL BE USED TO DETERMINE
                  THE EFFECT OF HEATED EFFLUENTS ON COMMUNITY STRUCTURE AND FUNCTION.
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•PROJECT: 001937-MESOSCALE SULFUR BALANCE STUDIES

STARTING/ COMPLETION DATE : 12/75 - 04/79 : FY78
TASK CODE=G625B-EA-14 **EPA=R803887-03 ** (GRANT)

EPA OFFICER.: CF WALTERS — EPA/ESRL - RTP
INVESTIGATOR.: JW WINCHESTER — FLORIDA STATE UNIV — ARTS & SCI/CHEM DEPT
JW NELSON — FLORIDA STATE UNIV — ARTS & SCI/CHEM DEPT
MILESTONES...: 04/79 -ORD REPORT ON SULFUR IN AEROSOL PARTICLES
PROGRAM ID...: (PE-625) HEALTH AND ECOLOGICAL EFFECTS
MANDATE......: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001937 SSIE-GMA 3952 1 EPA -R803887-03 TASK-G625B-EA-14
ORD -RG10B30-1078 LABN-G603A-AA-116 MAND-10-02
PE -625 LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: A COMPREHENSIVE STUDY IS BEING CONDUCTED TO CHARACTERIZE THE OCCURRENCE OF SULFUR IN AEROSOL PARTICLES AT SAMPLING STATIONS IN 14 LOCATIONS BETWEEN THE MID-CONTINENT AND EASTERN SEABOARD OF CONTINENTAL U.S.A. ADDITIONAL REMOTE STATIONS IN MARINE AND CONTINENTAL AREAS ARE ALSO BEING OPERATED TO PROVIDE IMPORTANT BACKGROUND INFORMATION. EMPHASIS IS BEING PLACED ON THE CONCENTRATIONS OF SULFUR IN RELATION TO OTHER ELEMENTS PRESENT IN THE AEROSOL AND ON THE TIME VARIABILITY OF THESE CONCENTRATIONS WITH A TIME RESOLUTION OF 2 HOURS. SAMPLING IS BEING CARRIED OUT CONTINUOUSLY AT HEIGHTS FROM GROUND LEVEL TO 30 METERS BY A UNIQUE TIME SEQUENCE FILTER SAMPLER WHICH HAS BEEN DEVELOPED AT FLORIDA STATE UNIVERSITY. ADDITIONAL SAMPLES ARE PLANNED TO BE TAKEN DURING INTENSIVE PERIODS DURING THE YEAR BY CASCADE IMPACTORS AT ABOUT FIVE OF THE FILTER SAMPLING SITES, USING CASCADE IMPACTORS FOR DETERMINATION OF THE PARTICLE SIZE DISTRIBUTION OF SULFUR AND RELATED ELEMENTS. ELEMENTAL ANALYSIS IS PERFORMED USING PROTON INDUCED X-RAY EMISSION, A HIGHLY SENSITIVE TECHNIQUE PERMITTING BOTH THE EXTREMELY SHORT 2-HOUR TIME RESOLUTION ON A CONTINUOUS BASIS FOR FILTER SAMPLES AS WELL AS THE SIZE RESOLUTION OF PARTICLES AS SMALL AS 0.25 MICRON DIAMETER BY CASCADE IMPACTORS. BY MEANS OF THE COMBINATION OF SAMPLING TECHNIQUES, THE IMPACT OF FOSSIL FUEL COMBUSTION AND OTHER ANTHROPOGENIC SOURCES OF SULFUR ON THE NATURAL CHARACTERISTICS OF THE ATMOSPHERE MAY BE PRECISELY DETERMINED.

*PROJECT: 004827-MESOSCALE SULFUR BALANCE STUDIES

STARTING/ COMPLETION DATE : 05/78 - 09/79 : FY79
TASK CODE=G832B-FA-132 **EPA=R803887-03 ** (GRANT)

EPA OFFICER.: C WALTERS — EPA/ESRL - RTP — 919-541-2648
INVESTIGATOR.: JW WINCHESTER — FLORIDA STATE UNIV — ARTS & SCI/CHEM DEPT
MILESTONES...: 01/79 -INTERPRETIVE REPORT ON REGIONAL AEROSOL NETWORK
09/79 -FINAL REPORT ON SULFUR BALANCE STUDIES
PROGRAM ID...: (PE-832) ATMOS TRANS OF ENERGY RELATED POLLUTANTS
FINAL OUTPUT.: FINAL REPORT ON SULFUR BALANCE STUDIES
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: ALL SAMPLING COMPLETED. DATA REDUCTION AND EVALUATION ONGOING.

ORDIS CODES..:	RECN-004827	SSIE-GMA 5936	EPA -R803887-03	TASK-G832B-FA-132
	ORD -RG10B30-1079	MAND-10-02	PE -832	
		LABT-EPE		
PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: THIS IS A COMPREHENSIVE STUDY TO CHARACTERIZE THE OCCURRENCE OF SULFUR IN AEROSOL PARTICLES AT SAMPLING STATIONS IN LOCATIONS BETWEEN THE MID-CONTINENT AND EASTERN SEABOARD OF CONTINENTAL U.S.A. ADDITIONAL REMOTE STATIONS IN MARINE AND CONTINENTAL AREAS ARE ALSO BEING OPERATED TO PROVIDE IMPORTANT BACKGROUND INFORMATION. EMPHASIS IS BEING PLACED ON THE CONCENTRATIONS OF SULFUR IN RELATION TO OTHER ELEMENTS PRESENT IN THE AEROSOL AND ON THE TIME VARIABILITY OF THESE CONCENTRATIONS WITH A TIME RESOLUTION OF 2 HOURS. APPROACH: SAMPLING IS BEING CARRIED OUT CONTINUOUSLY AT HEIGHTS FROM GROUND LEVEL TO 30 METERS BY A UNIQUE TIME SEQUENCE FILTER SAMPLER WHICH HAS BEEN DEVELOPED AT FLORIDA STATE UNIVERSITY. ADDITIONAL SAMPLES ARE PLANNED TO BE TAKEN DURING INTENSIVE PERIODS DURING THE YEAR BY CASCADE IMPACTORS AT ABOUT FIVE OF THE FILTER SAMPLING SITES, USING CASCADE IMPACTORS FOR DETERMINATION OF THE PARTICLE SIZE DISTRIBUTION OF SULFUR AND RELATED ELEMENTS. ELEMENTAL ANALYSIS IS PERFORMED USING PROTON INDUCED X-RAY EMISSION. RESULTS TO DATE: ALL SAMPLING IS COMPLETED. DATA REDUCTION AND EVALUATION IS ONGOING.

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*PROJECT: 001874-SULFUR BUDGET IN LARGE PLUMES

                    STARTING/ COMPLETION DATE : 07/75 - 03/79 :   FY78
                    TASK CODE=G603A-AG-17  **EPA=R803896-02  ** (GRANT)
 EPA  OFFICER.: WE WILSON                EPA/ESRL - RTP
 INVESTIGATOR.: RB HUSAR                 WASHINGTON UNIV                      MECH ENG DEPT
                NV GILLANI               WASHINGTON UNIV                      MECH ENG DEPT
                JD HUSAR                 WASHINGTON UNIV                      MECH ENG DEPT
 PROGRAM ID...: (PE-603 )          HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
 MANDATE......: 10-02     CLEAN AIR ACT
 ORDIS CODES..: RECN-001874        SSIE-GMA  3871 1      EPA -R803896-02       TASK-G603A-AG-17
                ORD -RG10B51-1078  LABN-G603A-AA-105     MAND-10-02
                PE  -603                                 LABT-EPE

 PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  OCT-DEC 77
                                   ACCESS-PUBLIC
 COMMENT......: CURRENT YR FUNDING INCLUDES: G603A-AA117 - $21000;
                G625B-EA093 - $25000' G603A-AA014 - $44000
                G603A-AA028 - $10000
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ABSTRACT.....: THIS TASK IS PART OF A LARGE PROGRAM TO DETERMINE THE OVERALL TRANSPORT, TRANSFORMATION AND REMOVAL (TRANSMISSION) PROCESSES OF ATMOSPHERIC SULFUR COMPOUNDS. THE MAIN EMPHASIS IS ON UNDERSTANDING SULFUR TRANSMISSION IN WELL-DEFINED PLUMES SUCH AS POWER PLANT AND URBAN PLUMES AS WELL AS ON THE REGIONAL (1000 KM) SCALE. AS PART OF THE STATE PROGRAM (SULFUR TRANSPORT AND TRANSFORMATION IN THE ENVIRONMENT), WASHINGTON UNIVERSITY WILL BE RESPONSIBLE FOR ADAPTING SEVERAL MELOY 285 SULFUR ANALYZERS FOR AIRCRAFT MEASUREMENT OF PARTICULATE SULFUR PRIOR TO THE TENNESSEE PLUME STUDY. THE GRANTEE WILL ALSO ASSIST IN THE OPERATIONS CONTROL CENTER DURING THE AUGUST-SEPTEMBER, 1978 INTENSIVE. HE WILL BE RESPONSIBLE FOR ANALYZING THE CONTINUOUS SO2, SF6, AND PARTICULATE SULFUR MEASUREMENTS IN TERMS OF SULFATE FORMATION RATES. SULFURIC ACID AND RELATED POLLUTANT DATA WILL BE ANALYZED IN TERMS OF LONG-RANGE TRANSPORT, TRANSFORMATION AND DEPOSITION OF SULFUR COMPOUNDS IN ST.LOUIS, MO AND STATE COLLEGE, PA. IN ADDITION TO MEASURING TOTAL PARTICULATE USING THERMAL ANALYSIS FLAME PHOTOMETRIC DETECTION THERE WILL ALSO BE A HEATED AND AN AMBIENT INTEGRATING NEPHELOMETER AND A FLORIDA STATE STREAKER. IN ADDITION, WASHINGTON UNIVERSITY WILL APPLY THE INFORMATION GAINED IN MISTT (MIDWEST INTERSTATE SULFUR TRANSFORMATION AND TRANSPORT) TO EXAMINE A VARIETY IN OR REMOVAL OF PRIMARY SULFATE, CHANGES IN STACK HEIGHT OR EXHAUST TEMPERATURE, AND VARIATIONS IN SO2 EMISSION RATES WITH TIME OF DATA OR SEASON TO PROMOTE DEPOSITION.

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*PROJECT: 001929-SULFUR BUDGET IN LARGE PLUMES

                 STARTING/ COMPLETION DATE : 04/77 - 03/78 :   FY77
                 TASK CODE=G625B-EA-06  **EPA=R803896-02  ** (GRANT)
  EPA  OFFICER.: WE WILSON               EPA/ESRL - RTP
  INVESTIGATOR.: RB HUSAR                WASHINGTON UNIV                  MECH ENG DEPT
                 NV GILLANI              WASHINGTON UNIV                  MECH ENG DEPT
                 JD HUSAR                WASHINGTON UNIV                  MECH ENG DEPT
  MILESTONES...: 09/76 -FINAL REPORT
                 12/77 -FINAL REPORT
                 09/78 -FINAL REPORT
  PROGRAM ID...: (PE-625 )          HEALTH AND ECOLOGICAL EFFECTS
  ORDIS CODES..: RECN-001929         SSIE-GMA  3768     EPA -R803896-02      TASK-G625B-EA-06
                 PE  -625                               LABT-EPE
  PROJ STATUS..: PROJECT-COMPLETED   CATEGORY-RESEARCH  DATA-ORIGINAL        UPDATED-  OCT-DEC 76
                                     ACCESS-PUBLIC
  ABSTRACT.....: THE OBJECTIVE OF THIS PROGRAM AS A PART OF PROJECT MISTT (MIDWEST INTERSTATE SULFUR TRANSFORMATION
                  AND TRANSPORT) IS THE QUANTITATIVE DETERMINATION OF THE FATE OF ATMOSPHERIC SULFUR, I.E., THE RATE
                  OF SULFATE FORMATION AND THE RATE OF SO2 REMOVAL TO THE GROUND. LARGE PLUMES EMITTED FROM THE
                  ELEVATED (POWER PLANT) AND LOW LEVEL SOURCES (URBAN) WERE STUDIED ON THE REGIONAL SCALE. AIRBORNE
                  MEASUREMENTS IN THE PLUMES AND BACKGROUND AIR OUTSIDE THE PLUME WERE CARRIED OUT FOR SO2 O3 NOX,
                  BSCAT, AEROSOL CHARGE, PARTICULATE SULFUR CONCENTRATION AND SUPPORTED BY EXTENSIVE METEOROLOGICAL
                  MEASUREMENTS. SULFUR BUDGETS OF WELL DEFINED PLUMES WERE ASSESSED. TRANSPORT OF POLLUTANTS IN
                  PLUMES WAS CHARACTERIZED IN TERMS OF HORIZONTAL "LONG RANGE TRANSPORT" AND VERTICAL TRANSPORT. THE
                  IMPORTANCE OF DRY REMOVAL FOR DIFFERENT TYPES OF PLUMES AND METEOROLOGICAL CONDITIONS WAS ASSESSED.
                  SO2 TO PARTICULATE SULFATE CONVERSION RATES WERE DETERMINED FOR THE COAL-FIRED LABADIE POWER PLANT
                  PLUME AND THE DIURNAL VARIABILITY (1-4 PERCENT PER HOUR FOR NOON HOURS AND 0.5 PERCENT PER HOUR FOR
                  NIGHT HOURS) WAS DETERMINED.

*PROJECT: 001660-SULFUR BUDGET IN LARGE PLUMES - SULFURIC ACID MEASUREMENTS

                 STARTING/ COMPLETION DATE : 04/77 - 06/79 :   FY79
                 TASK CODE=G603A-AA-117 **EPA=R803896-02  ** (GRANT)
  EPA  OFFICER.: WE WILSON               EPA/ESRL - RTP                   919-541-2551
  INVESTIGATOR.: RB HUSAR                WASHINGTON UNIV                  MECH ENG DEPT
  MILESTONES...: 03/79 -STUDY COMPLETED
  PROGRAM ID...: (PE-603 )          HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
  MANDATE......: 10-02     CLEAN AIR ACT
  CURR. RESULTS: SAMPLES COLLECTED.  THEY ARE BEING ANALYZED
                 AND DATA EVALUATED.
  ORDIS CODES..: RECN-001660         SSIE-GMA  5493 1   EPA -R803896-02      TASK-G603A-AA-117
                 ORD -RG10B30-1079   MAND-10-02         PE  -603
                                     LABT-EPE

  PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH  DATA-UPDATED         UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
  ABSTRACT.....: OBJECTIVE: SULFURIC ACID AND RELATED POLLUTANT DATA WILL BE ANALYZED IN TERMS OF LONG-RANGE
                  TRANSPORT, TRANSFORMATION AND DEPOSITION OF SULFUR COMPOUNDS. APPROACH: A PARTICULATE SULFUR
                  MONITOR (FPD WITH SCRUBBER) WILL BE USED WITH A HEATED INLET TO MEASURE TOTAL PARTICULATE SULFUR
                  AND SULFURIC ACID IN ST. LOUIS WHERE OTHER MEASUREMENTS ARE AVAILABLE. RESULTS TO DATE: SAMPLES
                  HAVE BEEN COLLECTED. THEY ARE BEING ANALYZED AND THE DATA EVALUATED.
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*PROJECT: 000469-EVALUATION OF AMES' WASTE PROCESS - AN ENERGY RECOVERY SYSTEM

STARTING/ COMPLETION DATE : 02/76 - 06/79 : FY79
TASK CODE=B624B-391 **EPA=R803903 ** (GRANT)

EPA OFFICER.: RA OLEXSEY — EPA/IERL - CINC
INVESTIGATOR.: AO CHANTLAND — AMES CITY GOVT — DEPT OF PUBLIC WORKS
LJ SHANNON — MIDWEST RES INST — TECH ECON SECTION
AW JOENSEN — IOWA UNIV OF SCI & TECH
ER BAUMAN — IOWA UNIV OF SCI & TECH

MILESTONES...: 04/77 -GRANT AMENDMENT
06/79 -FINAL REPORT RECEIVED

PROGRAM ID...: (PE-624) CONSERVATION AND UTILIZATION TECHNOLOGY ASSESSMENT

MANDATE......: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE

CURR. RESULTS: EMISSIONS AND PERFORMANCE EVALUATIONS COMPLETED FOR BOTH STOKER AND PULVERIZED COAL BOILERS. ECONOMIC EVALUATION AND DATA ANALYSIS CONTINUING. FIRST YEAR REPORT HAS BEEN PUBLISHED.

ORDIS CODES..: RECN-000469	SSIE-GMA 2719 3	EPA -R803903	TASK-B624B-391
ORD -RB10B30-5079	MAND-10-05	MAND-20-14	
PE -624		LABT-EET	

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE STUDY WILL ASSESS THE EFFECTS OF USING MUNICIPAL SOLID WASTE AS A SUPPLEMENTARY FUEL. CO-FIRING OF MSW WITH COAL IN STOKER AND TANGENTIALLY FIRED BOILERS WILL BE CONDUCTED AND SINCE ONE BOILER IS THE SAME AS AT ST. LOUIS, STUDIES WILL PERMIT CONFIRMATION, AND COMPARISON OF SELECTED ST. LOUIS RESULTS. APPROACH: ASSESSMENTS WILL BE MADE OF THE TECHNICAL AND ENVIRONMENTAL ASPECTS OF THESE CO-FIRING TECHNIQUES. IN ADDITION, TECHNICAL AND ECONOMIC TESTS AND EVALUATION WILL BE CONDUCTED ON THE SECOND GENERATION MSW PROCESSING FACILITY ASSOCIATED WITH SUPPLYING THE REFUSE DERIVED FUEL. RESULTS TO DATE: EMISSIONS AND PERFORMANCE EVALUATIONS HAVE BEEN COMPLETED FOR BOTH THE STOKER AND THE PULVERIZED COAL BOILERS. THE ECONOMIC EVALUATION AND THE DATA ANALYSES IS CONTINUING. A FIRST YEAR REPORT HAS BEEN PUBLISHED. EPA-600/2-77-205.

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*PROJECT: 003300-SOUTH CAROLINA OVERLAND FLOW PROJECT

                  STARTING/ COMPLETION DATE : 12/75 - 01/81 :   FY79
                  TASK CODE=L822C-034    **EPA=R803929-02  ** (GRANT)
EPA  OFFICER.: BE BLEDSOE                EPA/ERL - ADA                    405-332-8800 E
INVESTIGATOR.: JE JENKINS                STA DEPT OF HLTH/ENV CONT
               AR ABERNATHY              CLEMSON UNIV
               MM WATKINS                STA DEPT OF HLTH/ENV CONT
MILESTONES...: 01/81 -FINAL PROJECT REPORT
PROGRAM ID...: (PE-822 )           POINT SOURCE TECH DEV (WASTEWATER SYS)
MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003300         SSIE-GMA  5309 1     EPA -R803929-02      TASK-L822C-034
               ORD -RL10B30-1079   MAND-10-01           LABN-L611C-034
               PE  -822                                 LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH    DATA-UPDATED         UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
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ABSTRACT.....: A SITE IN UPLAND SOUTH CAROLINA WILL BE SELECTED FOR CONSTRUCTION OF AN OVERLAND FLOW SEWAGE TREATMENT SYSTEM WHICH CAN BE OPERATED IN CONJUNCTION WITH A FACULTATIVE LAGOON SO THAT BOTH RAW SEWAGE AND LAGOON EFFLUENT CAN BE APPLIED TO THE LAND. A SYSTEM FOR ABOUT 1,000 PERSONS OR ABOUT 100,000 GALLONS OF WASTEWATER PER DAY IS PLANNED. THE CONSTRUCTION WILL BE COMPLETED DURING THE FIRST YEAR. OPERATION OF THE SYSTEM WILL BE CARRIED OUT DURING YEARS TWO AND THREE ALONG WITH SAMPLING AND ANALYSES REQUIRED TO EVALUATE THE FEASIBILITY, RELIABILITY AND EFFICIENCY OF OVERLAND FLOW IN TREATING BOTH TYPES OF WASTEWATERS. PROGRESS: AN OVERLAND FLOW TREATMENT SYSTEM WAS BUILT AT EASLEY DURING THE FIRST TWO YEAR PROJECT PERIOD. THIS IS NEARING COMPLETION AND WILL BE READY FOR START-UP BY SEPTEMBER 1978. THE CONTINUATION OF THIS PROJECT WILL BE FOR OPERATION AND TESTING AT THE FACILITY, IN ORDER TO DETERMINE TREATMENT EFFICIENCIES FOR VARIED APPLICATION RATES AND APPLICATION SCHEDULES.

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*PROJECT: 003324-EVALUATION OF HIGH-RATE INFILTRATION-PERCOLATION BEDS TO IMPROVE WATER
          QUALITY
               STARTING/ COMPLETION DATE : 08/75 - 10/79 :   FY79
               TASK CODE=L822C-052     **EPA=R803931-02  ** (GRANT)
 EPA  OFFICER.: LE LEACH               EPA/ERL - ADA                        405-332-8800 E
 INVESTIGATOR.: DG SMITH               BOULDER CITY GOVT
                KD LINSTEDT            UNIV OF COLORADO                     DEPT CIV & ENV ENG
                ER BENNETT             UNIV OF COLORADO                     DEPT CIV & ENV ENG
 MILESTONES...: 08/76 -INTERIM REPORT RECEIVED
                07/77 -SPECIFIC DESIGN DATA FOR BOULDER AND SIMILAR SYSTEMS
                10/78 -FINAL REPORT - 3 YEARS DATA FOR TECHNICAL DESIGN BULLETINS
                03/79 -FINAL REPORT ON PHASE I (SECONDARY EFFLUENT STUDIES) IN PROGRESS
                10/79 -SUPPLEMENTAL FINAL REPORT ON PRIMARY EFFLUENT STUDIES
 PROGRAM ID...: (PE-822 )          POINT SOURCE TECH DEV (WASTEWATER SYS)
 FINAL OUTPUT.: SUPPLEMENTAL FINAL REPORT ON PRIMARY
                EFFLUENT STUDIES.
 MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
 ORDIS CODES..: RECN-003324        SSIF-GMA  3857 2      EPA -R803931-02      TASK-L822C-052
                ORD -RL10B30-1079  MAND-10-01            LABN-L611C-052
                PE  -822                                 LABT-EPE

 PROJ STATUS..: ACTIVE -MULTIYEAR     CATEGORY-RESEARCH     DATA-UPDATED         UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
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ABSTRACT.....: THIS PROJECT INVOLVES THE OPERATION AND MONITORING OF THREE INFILTRATION-PERCOLATION BASINS OF VARYING AREAS LESS THAN ONE ACRE. SECONDARY EFFLUENT FROM A MUNICIPAL WASTEWATER TREATMENT PLANT IS APPLIED AT LOADINGS OF 100 ACRE-FEET/ACRE/YEAR TO 200 ACRE-FEET/ACRE/YEAR. THE ANALYSIS OF WATER QUALITY AND THE VARIOUS OPERATIONAL MODES AVAILABLE AND THEIR EFFECT ON WATER QUALITY IS THE MAIN EMPHASIS OF THE PROJECT. ADDITIONAL STUDIES IN THE SUPPLEMENTAL FUNDING FOR FY '79 ARE SCHEDULED TO EVALUATE PRIMARY TREATED SEWAGE ON EXISTING INFILTRATION BASINS. THIS WASTEWATER WILL BE APPLIED AT RATES OF 50 ACRE-FEET/ACRE/YEAR AND 100 ACRE-FEET/ACRE/YEAR.

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*PROJECT: 003768-TOXIC EFFECTS ON THE AQUATIC BIOTA FROM COAL AND OIL SHALE DEVELOPMENT

                   STARTING/ COMPLETION DATE : 07/75 - 11/79 :   FY79
                   TASK CODE=N831 -0002   **EPA=R803950-03  ** (GRANT)
                                           EPA/ERL - DULUTH                    218-727-6692 E
EPA  OFFICER.: DI MOUNT                    COLORADO STATE UNIV                 NAT RESOURCE ECOLOGY LAB
INVESTIGATOR.: RV THURSTON
MILESTONES...: 03/79 -LITERATURE REVIEW ON METAL BIOACCUMULATION
               06/79 -6 REPORTS ON BIOLOGICAL EFFECTS OF COAL MINING
               08/79 -CHEMICAL EFFECTS OF OIL SHALE LEACHING
               08/79 -FLY ASH CHEMISTRY
               09/79 -CHEMICAL EFFECTS OF COAL COMBUSTION
               11/79 -4 SYNTHESIS REPORTS ON OIL SHALE, COAL MINING & COMBUSTION
PROGRAM ID...: (PE-831 )          TRANS.FATE, AND EFFECTS OF ENERGY REL POLLUTANTS
MANDATE......: 30-99     ENERGY RESEARCH
ORDIS CODES..: RECN-003768        SSIE-GMA  3526 3      EPA -R803950-03      TASK-N831 -0002
               ORD -RN10B30-3079  MAND-30-99            PE  -831
                                  LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH     DATA-BEING UPDATED   UPDATED-  OCT-DEC 79
                                  ACCESS-PUBLIC
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ABSTRACT.....: THE OVERALL OBJECTIVE OF THIS RESEARCH PROJECT IS TO PROVIDE PREDICTIVE INFORMATION WITH REGARD TO POTENTIAL TOXICANTS TO THE AQUATIC ENVIRONMENT RESULTING FROM COAL AND OIL SHALE EXTRACTION AND CONVERSION. THE SPECIFIC OBJECTIVES ARE TO IDENTIFY AND QUANTIFY THOSE CHEMICAL PRODUCTS OF COAL AND OIL SHALE EXTRACTION AND CONVERSION WHICH MAY REACH SURFACE WATERS, AND TO DETERMINE BY BOTH FIELD STUDIES AND LABORATORY BIOASSAYS THE DEGREE TO WHICH THOSE CHEMICALS MAY BE ACUTELY OR CHRONICALLY TOXIC TO FISHES AND AQUATIC INVERTEBRATES, OR MAY BECOME INVOLVED AS PART OF THE FOOD CHAIN. FOUR CATEGORIES OF ENERGY DEVELOPMENT ARE BEING CONSIDERED: COAL MINING, COAL COMBUSTION, COAL GASIFICATION AND LIQUEFACTION, AND OIL SHALE EXTRACTION AND PROCESSING. POTENTIAL TOXICANTS TO THE AQUATIC ENVIRONMENT ARE BEING IDENTIFIED BY A COMBINATION OF FIELD, LABORATORY, AND LITERATURE STUDIES, AS WELL AS BY INFORMATION GAINED FROM COOPERATIVE INPUT FROM OTHER ENERGY-RELATED RESEARCH PROGRAMS. CONCURRENT CHEMICAL AND BIOLOGICAL LABORATORY AND FIELD BIOASSAYS AS WELL AS AQUATIC DISTRIBUTION STUDIES DICTATE WHAT ADDITIONAL OR ALTERNATE EMPHASIS IS REQUIRED IN THE LABORATORY AND FIELD CHEMICAL STUDIES.

100<

*PROJECT: 004566-KANEOHE BAY - RESOURCES OF A TROPICAL ESTUARY TO RELAXATION OF SEWAGE STRESS

STARTING/ COMPLETION DATE : 11/75 - 11/78 : FY78
TASK CODE=X614 -001 **EPA=R803983-03 ** (GRANT)

EPA OFFICER.: KT PEREZ EPA/OHR- DAA 838-4843
INVESTIGATOR.: SV SMITH UNIV OF HAWAII SYSTEM HAWAII INST MARINE BIOLOGY
MILESTONES...: 11/78 -FINAL REPORT
PROGRAM ID...: (PE-614) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
MANDATE......: 30-99 ECOLOGICAL
CURR. RESULTS: FIELD MONITORING AND FIELD AND LAB EXPERIMENTS BEING PERFORMED. HAVE PUBLISHED SEVERAL PAPERS AND TWO ANNUAL REPORTS TO DATE.

ORDIS CODES..:	RECN-004566	SSIE-GMA 5577	EPA -R803983-03	TASK-X614 -001
	ORD -RX10B30-3078	MAND-30-99	PE -614	
		LABT-OHR		
PROJ STATUS..:	PROJECT-ACTIVE	CATEGORY-RESEARCH	DATA-ORIGINAL	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVES: TO ASCERTAIN THE BIOLOGICAL AND CHEMICAL RESPONSES TO A TROPICAL CORAL REEF/ESTUARY ECOSYSTEM TO THE TERMINATION OF SEWAGE STRESS. TO WHAT EXTENT AND AT WHAT RATE DOES THE ECOSYSTEM RETURN TO PRE-STRESS CONDITIONS? APPROACH: FIELD MONITORING AND FIELD AND LABORATORY EXPERIMENTS ARE BEING PERFORMED. WE HAVE 1-PLUS YEARS OF TIME-SERIES PRE-DIVERSION BASELINE DATA, AND WE ANTICIPATE COLLECTING 1-PLUS YEARS OF POST DIVERSION RECOVERY DATA, WE WILL THEN BE ABLE TO DOCUMENT THE RECOVERY CHARACTERISTICS OF THE ECOSYSTEM AND DERIVE PREDICTIVE ABILITY THEREFROM. WE HAVE PUBLISHED SEVERAL PAPERS AND HAVE PREPARED TWO ANNUAL REPORTS TO DATE.

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*PROJECT: 003797-KANEOHE BAY - RESPONSES OF A TROPICAL ESTUARY TO RELAXATION OF SEWAGE
          STRESS
              STARTING/ COMPLETION DATE : 11/75 - 11/79 :    FY79
              TASK CODE=P608C-09     **EPA=R803983-03  ** (GRANT)
 EPA  OFFICER.: KT PEREZ                EPA/ERL - NARR                 401-789-1071
 INVESTIGATOR.: SV SMITH                UNIV OF HAWAII SYSTEM          HAWAII INST MARINE BIOLOGY
 MILESTONES...: 11/79 -PROJECT COMPLETION DATE, FINAL REPORT
 PROGRAM ID...: (PE-608 )          ECOLOGICAL PROCESSES AND EFFECTS
 FINAL OUTPUT.: PROJECT COMPLETION DATE, FINAL REPORT.
 MANDATE......: 10-01      FEDERAL WATER POLLUTION CONTROL ACT
 CURR. RESULTS: OVER 1 YEAR TIME-SERIES BASELINE DATA.  SEVERAL PAPERS
                PUBLISHED AND TWO ANNUAL REPORTS PREPARED.
 ORDIS CODES..: RECN-003797         SSIE-GMA  4248 2     EPA -R803983-03      TASK-P608C-09
                ORD -RP10B31-1079   LABN-P775 -091       MAND-10-01
                PE  -608                                 LABT-EPE

 PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH    DATA-UPDATED         UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
 COMMENT......: FY=79,RC=P,AH=RD,PE=819,$00090000
 ABSTRACT.....: OBJECTIVES: TO ASCERTAIN THE BIOLOGICAL AND CHEMICAL RESPONSES OF A TROPICAL CORAL REEF/ESTUARY
                 ECOSYSTEM TO THE TERMINATION OF SEWAGE STRESS. TO WHAT EXTENT AND AT WHAT RATE DOES THE ECOSYSTEM
                 RETURN TO PRE-STRESS CONDITIONS? APPROACH: FIELD MONITORING AND FIELD AND LABORATORY EXPERIMENTS
                 ARE BEING PERFORMED. WE HAVE 1 PLUS YEARS OF TIME-SERIES PRE-DIVERSION BASELINE DATA, AND WE
                 ANTICIPATE COLLECTING 1 PLUS YEARS OF POST DIVERSION RECOVERY DATA. WE WILL THEN BE ABLE TO
                 DOCUMENT THE RECOVERY CHARACTERISTICS OF THE ECOSYSTEM AND DERIVE PREDICTIVE ABILITY THEREFROM. WE
                 HAVE PUBLISHED SEVERAL PAPERS AND HAVE PREPARED TWO ANNUAL REPORTS TO DATE.
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*PROJECT: 003313-RECLAMATION OF HEAVY-METAL CONTAMINATED SOILS

STARTING/ COMPLETION DATE : 11/76 - 02/80 : FY79
TASK CODE=L822C-046 **EPA=R804323-03 ** (GRANT)

EPA OFFICER.: WR DUFFER EPA/ERL - ADA 405-332-8800 E
INVESTIGATOR.: P INYANGETOR LANGSTON UNIV UNDERGRADUATE SCH
WA FRANKS LANGSTON UNIV UNDERGRADUATE SCH

MILESTONES...: 10/77 -COMPLETE SITE SURVEY AND INITIAL SCREENING EXPERIMENTS
10/78 -COMPLETE EXP. INVOLVING VARIOUS TREATMENTS OF DENUDED AREA
06/79 -ESTABLISH LARGE-SCALE PLOTS EMPLOYING BEST RECLAMATION PRACTICES
02/80 -FINAL REPORT - PROCEDURES FOR RECLAIMING SMELTER DENUDED AREAS

PROGRAM ID...: (PE-822) POINT SOURCE TECH DEV (WASTEWATER SYS)

FINAL OUTPUT.: FINAL REPORT- PROCEDURES FOR RECLAIMING SMELTER DENUDED AREAS.

CURR. RESULTS: TOLERANT PLANT SPECIES HAVE BEEN DETERMINED, AND APPROPRIATE CULTURE PRACTICES HAVE BEEN ESTABLISHED FOR DEMONSTRATING REVEGETATION OF THE CONTAMINATED AREA.

ORDIS CODES..: RECN-003313	SSIE-GMA 3851 2	EPA -R804323-03	TASK-L822C-046
ORD -RL10B31-1079	LABN-L611C-046	PE -822	
	LABT-EPE		

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

COMMENT......: FY=79,RC=U,AH=RD,PE=622,$00014000
FY=79,RC=L,AH=RD,PE=822,$00041000

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS PROJECT IS TO DETERMINE WAYS TO RECLAIM LAND WHICH HAS BEEN SPOILED BY ZINC SMELTER AND ROASTER OPERATIONS. THE RESULTS SHOULD PROVIDE THE INFORMATION NECESSARY TO ESTABLISH PERMANENT VEGETATION ON DENUDED AREAS SURROUNDING THE FORMER ZINC SMELTER SITE AT HENRYETTA, OKLAHOMA. APPROACH: THE EXPERIMENTAL APPROACH INCLUDES GREENHOUSE STUDIES ON SOILS COLLECTED FROM THE SMELTER SITE, ESTABLISHMENT OF FIELD PLOTS BASED ON RESULTS OF A SOIL SURVEY AND TREATMENT REGIMES WORKED OUT IN THE GREENHOUSE STUDIES. A VARIETY OF PLANT SPECIES ARE TO BE TESTED IN FIELD PLOTS AND VARIOUS TREATMENT REGIMES INCLUDE SEWAGE EFFLUENT, SEWAGE SLUDGE, LIME AND COMMERCIAL FERTILIZER. SOILS ARE ANALYZED FOR HEAVY METALS AND PLANT SPECIES FOR UPTAKE OF HEAVY METALS. RESULTS TO DATE: TOLERANT PLANT SPECIES HAVE BEEN DETERMINED, AND APPROPRIATE CULTURE PRACTICES HAVE BEEN ESTABLISHED FOR DEMONSTRATING REVEGETATION OF THE CONTAMINATED AREA.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

PROJECT NO. (Do not use this space)
SSIE
EPA R804329 01

TITLE OF PROJECT
Technical & Economic Evaluation of BATEA Guidelines - Textiles

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

REVISED PAGE

See Attached List

NAME AND ADDRESS OF APPLICANT INSTITUTION
American Textile Manufacturers Institute, Inc.
Suite 2124, 400 S. Tryon Street
Charlotte, N. C. 28285

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Objective - to evaluate the treatment efficiency of technological processes defined by EPA as BATEA for the textile industry and to evaluate the economic achievability and impact on the industry resulting from the application of these technologies.

Approach - the project will consist of two phases, (1) engineering field studies and (2) economic evaluation.

Phase 1 - to be conducted by a mutually agreed upon consultant engaged prior to the development of the testing program. Two mobile pilot treatment units will be designed, constructed and, in total, be operated at approximately 24 manufacturing plant sites over the study period. Each plant site will be selected from BPT class plants to represent as completely as possible, all the EPA textile plant subcategories. The treatment processes to be tested by the mobile pilot plants will include chemical treatment (including carbon adsorption), multi-media filtration, chemical coagulation/ clarification (or equivalent) and other mutually acceptable processes if they can be accomplished within the scope, funding and context of the project.

Phase 2 - Process treatment data from phase 1 will be used to evaluate the economic achievability and impact upon each segment of the industry resulting from the application of the technologies tested in phase 1. This phase will be conducted by a mutually acceptable specialist in the field of economics.

Current Plans - the project will be under the general direction of the Environmental Preservation Committee of ATMI with a day-to-day monitoring by the Water Subcommittee. The Effluent Guidelines Division and the Office of Research and Development of EPA will be requested to cooperate in the project and to assign personnel to meet with ATMI representatives in formulating and monitoring the project.

*PROJECT: 002644-CHEMISTRY AND MODE OF ACTION OF INSECTICIDES

STARTING/ COMPLETION DATE : 01/76 - 02/81 : FY78
TASK CODE=H615F-7608 **EPA=R804345 ** (GRANT)

EPA OFFICER.: RL BARON — EPA/HERL - RTP
INVESTIGATOR.: TR FUKUTO — UNIV OF CALIFORNIA — COLL OF NAT & AGRIC SCI
RE MARCH — UNIV OF CALIFORNIA — COLL OF NAT & AGRIC SCI
TA MILLER — UNIV OF CALIFORNIA — COLL OF NAT & AGRIC SCI

MILESTONES...: 06/78 -METABOLISM OF CHIRAL ISOMERS OF PESTICIDES
01/78 -MELATHION IMPURITY IDENTIFICATION
06/79 -METABOLISM OF DERIVATIZED CARBAMATES

PROGRAM ID...: (PE-615) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS

MANDATE.......: 10-06 FEDERAL INSECTICIDE, FUNG. AND RODENT. ACT
20-30 AA FOR TOXIC SUBSTANCES

ORDIS CODES..: RECN-002644 SSIE-GMA 4270 1 EPA -R804345 TASK-H615F-7608
ORD -RH10830-5078 LABN-H615F-8608 MAND-10-06 LABT-OHR
MAND-20-30 PE -615

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: RESEARCH WILL BE CONTINUED IN AREAS CONCERNED WITH THE CHEMISTRY, METABOLISM, ENVIRONMENTAL ALTERATION, AND MODE OF ACTION OF INSECTICIDES IN MAMMALS, PLANTS, INSECTS, AND SOIL. EMPHASIS WILL BE PLACED ON THE FUNDAMENTAL INTOXICATION AND DETOXICATION PROCESSES WHICH TAKE PLACE IN BIOLOGICAL SYSTEMS AND THE ENVIRONMENT. THE FOLLOWING ONGOING PROJECTS WILL BE CONTINUED: (1) STUDIES ON THE ISOLATION, IDENTIFICATION, AND ASSESSMENT OF TOXICOLOGICAL PROPERTIES OF IMPURITIES PRESENT IN TECHNICAL ORGANOPHOSPHORUS INSECTICIDES. TECHNICAL INSECTICIDES CURRENTLY UNDER INVESTIGATION INCLUDE MALATHION, PHENTHOATE AND FENTHION. STUDIES ON THE MODE OF ACTION OF THE POTENTIATING EFFECTS CAUSED BY THE IMPURITIES ARE INCLUDED. (2) STUDIES ON THE METABOLISM, TOXICOLOGY AND ENVIRONMENTAL FATE OF PROMISING NEW INSECTICIDES. THE COMPOUND PRESENTLY BEING INVESTIGATED IS DIBUTYLAMINOSULFENYL-CARBOFURAN. (3) SYNTHESIS AND EVALUATION OF DELAYED NEUROTOXIC ACTIVITY OF STRUCTURAL ANALOGS OF LEPTOPHOS AND RELATED ESTERS. INCLUDED IN THIS STUDY IS THE RESOLUTION OF THE CHIRAL ISOMERS OF LEPTOPHOS AND EVALUATION OF THE ISOMERS FOR NEUROTOXICITY. (4) STRUCTURE-ACTIVITY CORRELATION ANALYSES OF DDT ANALOGS, CARBAMATE ESTERS, AND PHOSPHORAMIDATES. (5) STUDIES ON THE MODE OF ACTION OF SELECTIVELY TOXIC DERIVATIZED METHYLCARBAMATE INSECTICIDES. (6) INVESTIGATIONS OF SURFACE-MODIFIED SUPPORTS FOR THE GAS CHROMATOGRAPHY OF INSECTICIDES WITH EMPHASIS ON THE SEPARATION AND IDENTIFICATION OF IMPURITIES PRESENT IN TECHNICAL MATERIALS. (7) STUDIES ON THE CAUSE AND CONSEQUENCE OF INSECTIDICAL ACTION AT THE NEUROPHYSIOLOGICAL LEVEL.

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*PROJECT: 002124-SIMULTANEOUS COMPARISON OF THE EAA AND THE DIFFUSION BATTERY FOR THE
                 ATMOSPHERIC AEROSOL
                   STARTING/ COMPLETION DATE : 09/76 - 09/79 :    FY79
                   TASK CODE=G603A-AC-050 **EPA=R804370-01  ** (GRANT)
  EPA  OFFICER.: T  ELLESTAD            EPA/ESRL - RTP                    919-541-2253
  INVESTIGATOR.: J  BRICARD             CENTRE DETUDE NUCLEAIRES DE FONTEN  COMMISSARIAT A LENERGIE ATOMIQUE
                 J  BRICARD                                               UNIVERSITE DE PARIS
  MILESTONES...: 06/79 -COMPLETE ATMOSPHERIC COMPARISONS
                 09/79 -ORD REPORT; JOURNAL ARTICLES (TITLE)
  PROGRAM ID...: (PE-603 )          HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
  FINAL OUTPUT.: JOURNAL ARTICLES
  MANDATE......: 10-02      CLEAN AIR ACT
  CURR. RESULTS: COMPARISONS ON LAB-GENERATED AEROSOLS SHOW THAT THE
                 TWO METHODS AGREE FAVORABLY FOR AEROSOLS LARGER THAN
                 0.01 DIAMETER.  BELOW THAT SIZE, METHODS SHOW
                 SIGNIFICANT DISAGREEMENTS.
  ORDIS CODES..: RECN-002124         SSIE-GMA  5199 1      EPA -R804370-01      TASK-G603A-AC-050
                 ORD -RG10B30-1079   LABN-G712B-BB-64      MAND-10-02
                 PE  -603                                  LABT-EPE

  PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-BEING UPDATED   UPDATED-  OCT-DEC 79
                                     ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: TO COMPARE SUBMICROMETER PARTICLE SIZE DISTRIBUTIONS MEASURED BY AN ELECTRICAL AEROSOL ANALYZER AND A DIFFUSION BATTERY-NUCLEI COUNTER WHICH ARE SIMULTANEOUSLY SAMPLING ATMOSPHERIC AEROSOL. APPROACH: PRELIMINARY COMPARISONS WERE MADE ON LABORATORY AEROSOLS OF SULFATE AND ACTINON-DECAY PRODUCTS. FINAL COMPARISONS ARE BEING MADE ON ATMOSPHERIC AEROSOL AT URBAN, RURAL, AND MARINE LOCATIONS.

*PROJECT: 003337-GROUND WATER INJECTION OF RECLAIMED WATER IN PALO ALTO

STARTING/ COMPLETION DATE : 04/76 - 07/79 : FY79
TASK CODE=L824C-08 **EPA=R804431 ** (GRANT)

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EPA  OFFICER.: MR SCALF                EPA/ERL - ADA            405-332-8800 E
INVESTIGATOR.: PL MCCARTY              STANFORD UNIV            SCH OF ENG/CIV ENG DEPT
MILESTONES...: 05/77 -INTERIM REPORT
               05/78 -INTERIM REPORT
               07/79 -FINAL REPORT
PROGRAM ID...: (PE-824 )         DRINK WATER TREATMENT & GROUND WATER PROT
FINAL OUTPUT.: FINAL REPORT
MANDATE......: 10-15      SAFE DRINKING WATER ACT
CURR. RESULTS: PROPOSAL FOR THIRD YEAR OF PROJECT REVIEWED AND RECOMMENDED
               FOR FUNDING.
ORDIS CODES..: RECN-003337          SSIE-GMA  2804 3     EPA -R804431        TASK-L824C-08
               ORD -RL10B30-1079    LABN-L614-01         MAND-10-15
               PE  -824                                  LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH    DATA-UPDATED        UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT......: OBJECTIVE: RECLAIMED MUNICIPAL WASTEWATER IS BEING INJECTED INTO A CONFINED AQUIFER TO RECHARGE THE GROUND WATER SUPPLY AS WELL AS TO REPEL SALTWATER INTRUSION. IN THIS PROJECT, THE WATER QUALITY CHANGES THAT OCCUR AS THE WATER PASSES THROUGH THE GROUND ARE BEING EVALUATED WITH SPECIAL EMPHASIS ON THE TRANSPORT OF ORGANIC TRACE CONTAMINANTS AND VIRUSES. APPROACH: THE EFFECTIVENESS OF THE AQUIFER IN ATTENUATING THE MOVEMENT OF CONTAMINANTS IS BEING INVESTIGATED AND THE FIELD CAPACITY FOR REMOVAL IS ESTIMATED. LABORATORY STUDIES OF ADSORPTION, BIODEGRADATION, ION EXCHANGE, AND OXIDATION-REDUCTION PHENOMENA ARE BEING CONDUCTED TO EXPLAIN THE WATER QUALITY CHANGES OBSERVED IN THE FIELD. THE POTENTIAL FOR PRECIPITATION REACTIONS IS PREDICTED BY USING COMPUTER MODELS OF THE CHEMICAL EQUILIBRIA. A COMPUTER MODEL HAS BEEN DEVELOPED FOR SIMULATING FLOW AND WATER QUALITY CHANGES IN THE AQUIFER. THE ULTIMATE GOAL IS TO ASSESS THE FEASIBILITY OF REUSING THE EXTRACTED GROUNDWATER IN POTABLE WATER SUPPLIES. PROGRESS: A PROPOSAL FOR THE THIRD AND FINAL YEAR OF THE PROJECT HAS BEEN REVIEWED AND RECOMMENDED FOR FUNDING. THIS THIRD YEAR WILL BE CONCERNED WITH INTENSIVE MONITORING OF THE GROUND WATER NEAR ONE OF THE INJECTION-EXTRACTION WELL DOUBLETS FOR MOVEMENT OF TRACE ORGANICS, LABORATORY STUDY OF KINETICS OF ADSORPTION AND OF MICROBIAL DEGRADATION OF ORGANICS IN AN AQUIFER SYSTEM, AND THE DEVELOPMENT OF A GENERALIZED MATHEMATICAL MODEL FOR SIMILAR INJECTION SYSTEMS. IN ADDITION, HERL-CINCINNATI IS COOPERATING IN THIS THIRD YEAR IN AN EFFORT TO EXAMINE THE PALO ALTO WASTE TREATMENT EFFLUENTS, INCLUDING INJECTION WATER, FOR THE PRESENCE OF ORGANIC MATERIALS WITH MUTAGENIC ACTIVITY.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R 804444-04

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT: Biologically Mediated Corrosion & Deterioration of Water Quality in Water Distribution

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

John T. O'Connor, Chairman, Department of Civil Engineering--Principal Investigator

Shankha K. Banerji, Professor, Dept. of Civil Engineering--Co-Principal Investigator

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Missouri, Columbia, Mo. 65211

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objectives of the research project are to:

1. Determine the extent and nature of water quality problems originating in water distribution systems in the U.S.
2. Conduct laboratory studies to assess the potential for a treated water to promote sediment deposition and microbial growth in distribution systems.
3. Determine the role of microorganisms in mediating chemical changes observed in distribution systems.
4. Determine remedial measures for controlling sediment deposition, organism growth and quality deterioration.
5. Prepare a guidelines document for use by water utilities for assessing and controlling water quality problems in distribution systems.

A national survey of water quality problems in distribution system showed that regardless of size, water source and geographical location, virtually every responding water utility is experiencing some water quality problems.

Laboratory manifold studies showed that chlorine dose of 1.0mg/l was quite effective in controlling microbial growth. Also waters containing TOC of less than 5 mg/l had much less microbial growth in manifold tests.

In simulated pipe loop studies corrosion rate of cast iron coupons remained steady upto 3 weeks before leveling off. The water quality changes in the loops indicated a drastic D.O. drop, some increase in total iron concentration and an increase in standard plate counts. It was impossible to maintain sterile condition in selected loop systems despite repeated disinfection.

*PROJECT: 004347-DEVELOPMENT OF FIELD VIRUS CONCENTRATION TECHNOLOGY

STARTING/ COMPLETION DATE : 11/76 - 04/80 : FY79
TASK CODE=A884 -31 **EPA=R804474-03 ** (GRANT)

EPA OFFICER.: G BERG — EPA/EMSL - CINC — 513-684-7357
INVESTIGATOR.: CA SORBER — UNIV OF TEXAS — CTR FOR APPL RES & TECH

MILESTONES...: 04/79 -INTERIM REPORT
03/80 -DEVELOPMENT OF A DIATOMACEOUS EARTH SYSTEM
03/80 -FINAL REPORT

PROGRAM ID...: (PE-884) MEASUREMENT, TECHNIQUES & EQUIP DEV

FINAL OUTPUT.: DEVELOPMENT OF DIATOMACEOUS EARTH SYSTEM

MANDATE.......:
10-01 FEDERAL WATER POLLUTION CONTROL ACT
10-15 SAFE DRINKING WATER ACT
20-11 DAA FOR WATER PLANNING AND STANDARDS
20-13 DAA FOR DRINKING WATER
30-99 VIROLOGY METHODS

CURR. RESULTS: USE OF BENTONITE AS ADSORBENT ABANDONED. DIATOMACEOUS EARTH SHOWN TO BE EFFECTIVE ALTERNATE TO BENTONITE. PROTOTYPE SYSTEM DEVELOPED AND TESTED SUCCESSFULLY.

ORDIS CODES..:			
RECN-004347	SSIE-GMA 5620	EPA -R804474-03	TASK-A884 -31
ORD -RA10B30-5079	LABN-A713C-31	MAND-10-01	
MAND-10-15	MAND-20-11	MAND-20-13	MAND-30-99
PE -884		LABT-MTS	

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE OVERALL OBJECTIVE OF THIS STUDY IS TO OPTIMIZE A FLOW-THROUGH VIRUS ADSORBING FILTER MEDIA SYSTEM FOR RECOVERING SMALL NUMBERS OF VIRUSES FROM LARGE VOLUMES OF WATER. A HIGH RATE SYSTEM, CAPABLE OF CONCENTRATING AND RECOVERY OF PARTICULATE ASSOCIATED AS WELL AS "FREE" VIRUSES FROM AT LEAST 100 GALLON VOLUMES OF A VARIETY OF WATERS, IS SOUGHT. APPROACH: EFFORTS WILL CONCENTRATE ON: 1. CONTINUED EVALUATION OF CANDIDATE FILTER SYSTEMS CAPABLE OF PROVIDING A SUSTAINED HIGH FLOW RATE IN CONJUNCTION WITH THE USE OF THE DIATOMACEOUS EARTH VIRUS CONCENTRATION PROCEDURE. 2. EACH CANDIDATE FILTER MEDIA SYSTEM WILL BE EVALUATED IN TERMS OF THE OPTIMAL VIRUS ELUTION SYSTEM REQUIRED. 3. SUCCESSFUL PROTOTYPE FILTER-ELUTION SYSTEMS WILL BE UPGRADED SO THAT MINIMUM TEST VOLUMES OF 100 GALLONS CAN BE PROCESSED. 4. FIELD TESTING IN A VARIETY OF WATERS WILL BE INITIATED. RESULTS TO DATE: THE USE OF BENTONITE AS A VIRUS ADSORBENT FOR A HIGH VOLUME FLOW-THROUGH VIRUS CONCENTRATION PROCEDURE WAS ABANDONED. THIS WAS NECESSITATED BY THE LACK OF A FILTER SYSTEM CAPABLE OF MAINTAINING ITS INTEGRITY UNDER HIGH FLOW CONDITIONS. HOWEVER, DIATOMACEOUS EARTH HAS BEEN SHOWN TO BE AN EFFECTIVE ALTERNATIVE TO BENTONITE AS A VIRUS ADSORBENT. A PROTOTYPE SYSTEM DESIGNED TO USE DIATOMACEOUS EARTH HAS BEEN DEVELOPED AND TESTED SUCCESSFULLY.

*PROJECT: 003453-RESPONSE OF PLANTS TO AIR POLLUTION

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                    STARTING/ COMPLETION DATE : 06/76 - UNK   :   FY79
                    TASK CODE=M602 -001    **EPA=R804513-03  ** (GRANT)
EPA  OFFICER.: LC RANIERE              EPA/ERL - CORVALLIS                503-757-4625
INVESTIGATOR.: LH WEINSTEIN            BOYCE THOMPSON PLANT RES
MILESTONES...: 09/78 -FINAL REPORT
PROGRAM ID...: (PE-602 )         HEALTH AND ECOLOGICAL EFFECTS- ECOL. PROC. AND EFFECTS
MANDATE......: 10-02     CLEAN AIR ACT
CURR. RESULTS: YIELDS OF BEANS & TOMATOES REDUCED BY AMBIENT OXIDANTS
               SULFUR DIOXIDE MAY LOWER ACCUM. OF FLUORIDE IN PLANTS.
               REPEATED EXPOSURE TO SIM ACIDIC RAIN CAUSES NECROTIC
               LESIONS ON HERBACEOUS PLANTS.
ORDIS CODES..: RECN-003453         SSIE-GMA  2556 4      EPA -R804513-03      TASK-M602 -001
               ORD -RM10B30-1079   LABN-M602A-007        MAND-10-02
               PE  -602                                  LABT-EPE

PROJ STATUS..: PROJECT-COMPLETED   CATEGORY-RESEARCH     DATA-UPDATED         UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVES: (1) TO DETERMINE WHETHER CONCURRENT EXPOSURE TO MIXTURES OF HYDROGEN FLUORIDE AND OZONE OR HYDROGEN FLUORIDE AND NITROGEN DIOXIDE PRODUCES INTERACTIVE EFFECTS (ANTAGONISM OR SYNERGISM) ON THE GROWTH, YIELD OR ACCUMULATION OF FLUORIDE BY VEGETATION; (2) TO PROVIDE QUANTITATIVE ESTIMATES OF THE EFFECTS OF AMBIENT OXIDANTS ON THE GROWTH, DEVELOPMENT AND YIELD OF ECONOMICALLY-IMPORTANT PLANTS; (3) TO PROVIDE QUANTITATIVE ESTIMATES OF THE EFFECTS OF AMBIENT RAINFALL AND SIMULATED ACIDIC RAIN ON THE GROWTH, DEVELOPMENT AND YIELD OF CROP PLANTS. APPROACHES: FIELD EXPOSURE CHAMBERS, GREENHOUSES AND CONTROLLED ENVIRONMENT CHAMBERS SPECIALLY DESIGNED FOR THESE STUDIES WILL BE USED TO EXPOSE VEGETATION TO CONTROLLED CONCENTRATIONS OF POLLUTANTS. DOSE-RESPONSE RELATIONSHIPS WILL BE DETERMINED TO PROVIDE A BASIS FOR THE DEVELOPMENT OF PREDICTIVE MODELS. PROGRESS: WE HAVE FOUND THAT (1) YIELDS OF BEANS AND TOMATOES ARE REDUCED BY AMBIENT OXIDANTS OCCURRING IN YONKERS, NEW YORK; (2) SULFUR DIOXIDE MAY LOWER OR HAVE NO EFFECT ON THE ACCUMULATION OF FLUORIDE IN PLANTS EXPOSED SIMULTANEOUSLY TO HYDROGEN FLUORIDE AND SULFUR DIOXIDE DEPENDING ON THE PLANT SPECIES AND POLLUTANT CONCENTRATIONS; AND (3) REPEATED EXPOSURE TO SIMULATED ACIDIC RAIN CAUSES NECROTIC LESIONS ON SUSCEPTIBLE HERBACEOUS PLANT SPECIES WHEN PH VALUES ARE LESS THAN 3.4 AND ON NEEDLES OF EASTERN WHITE PINE TREES WHEN PH VALUES ARE LESS THAN 2.6.

*PROJECT: 000943-DEVELOPMENT OF SAFE METHODS FOR DISPOSAL OF EXCESS PESTICIDES USED BY AGRICULTURAL AND COMMERCIAL APPLICATORS
STARTING/ COMPLETION DATE : 10/76 - 10/81 : FY79
TASK CODE=C818A-04T09 **EPA=R804533-03 ** (GRANT)

EPA OFFICER.: CJ ROGERS EPA/MERL - CINC 513-684-7881
INVESTIGATOR.: CJ HALL DEPT. OF HORTICULTURE IOWA STATE UNIVERSITY OF SCIENCE &
MILESTONES...: 06/79 -COMPLETION OF VOLATILIZATION STUDIES
06/79 -COMPLETION OF BIOASSAYS STUDIES
09/79 -COMPLETION OF INVESTIGATION ON NEWLY CONSTRUCTED DISPOSAL PIT
10/81 -COMPLETE DEMONSTRATION ON PESTICIDE DISPOSAL
10/81 -FINAL REPORT
PROGRAM ID...: (PE-818) CONTROL TECHNOLOGY
MANDATE......: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE
CURR. RESULTS: SAFE AND EFFECTIVE DISPOSAL OF EXCESS PESTICIDES DEMONSTRATED. IN PROCESS OF INITIATING JOINT EPA/USDA PIT DISPOSAL DEMONSTRATION PROJECT.

ORDIS CODES..:			
RECN-000943	SSIE-GMA 3470 2	EPA -R804533-03	TASK-C818A-04T09
ORD -RC10B30-5079	LABN-C618A-7205	MAND-10-05	
MAND-20-14	PE -818		LABT-EET

PROJ STATUS..:			
PROJECT-ACTIVE	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
	ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: (1) EVALUATE OVERALL EFFECTIVENESS OF THE DISPOSAL PITS CURRENTLY IN USE BASED ON MATERIALS PREVIOUSLY DEPOSITED IN EACH; (2) DETERMINE PRESENCE OR ABSENCE OF ENVIRONMENTALLY HAZARDOUS COMPOUNDS IN EACH; (3) CONTINUE TO SAMPLE EACH PIT DURING TENURE OF STUDY; (4) ESTABLISH EXPERIMENTAL SYSTEMS FOR STUDYING THE FATE OF SELECTED PESTICIDES IN ISOLATED MICRO-PITS UNDER CONTROLLED CONDITIONS; (5) EVALUATE BIOLOGICAL ACTIVITY IN PRESENT SYSTEMS; (6) DEVELOP PLANS AND SPECIFICATIONS FOR DISPOSAL SYSTEM CONSTRUCTION AND MANAGEMENT. APPROACH: CONDUCT A 5-YEAR CHEMICA AND BIOLOGICAL STUDY OF TWO EXISTING PESTICIDE DISPOSAL SYSTEMS USED AT THE AGRONOMY-AG. ENGINEERING AND HORTICULTURE STATIONS WHICH HAVE BEEN IN USE 10 AND 5 YEARS, RESPECTIVELY. ADDITIONAL CONTROLLED MICRO-DISPOSAL SYSTEMS WILL BE ESTABLISHED TO DETERMINE THE FATE AND BIOLOGICAL CONSEQUENCES OF KNOWN QUANTITIES OF SELECTED DISPOSED COMPOUNDS. ACCURATE DATA WILL BE COLLECTED ON IDENTITY, QUALITY AND CONCENTRATION OF UNUSUAL DILUTE INSECTICIDES, FUNGICIDES, AND HERBICIDES DEPOSITED IN EXISTING AND TWO NEW DISPOSAL PITS. RELIABLE RECOMMENDATIONS FOR DISPOSAL SYSTEMS FOR FARMS AND COMMERCIAL APPLICATION SHOULD BE DEVELOPED AS A RESULT OF THE STUDY. RESULTS TO DATE: THE SAFE AND EFFECTIVE DISPOSAL OF EXCESS PESTICIDES HAS BEEN DEMONSTRATED IN THIS STUDY. THE SHWRD IS NOW IN THE PROCESS OF INITIATING A JOINT EPA-U.S. DEPARTMENT OF AGRICULTURE PIT DISPOSAL DEMONSTRATION PROJECT.

*PROJECT: 000294-SULFIDE PRECIPITATION TO TREAT NON-FERROUS METAL PRODUCTION WASTES

STARTING/ COMPLETION DATE : 10/77 - 10/79 : FY79
TASK CODE=B610C-171 **EPA=R804568-02 ** (GRANT)

EPA OFFICER.: HB DURHAM — EPA/IERL - CINC
INVESTIGATOR.: D BHATTACHARYY — DEPT. OF CHEM ENG. — UNIVERSITY OF KENTUCKY
RB GRIEVES — DEPT. OF CHEM ENG. — UNIVERSITY OF KENTUCKY

MILESTONES...: 03/78 -INTERIM REPORT
08/78 -GRANT AMENDMENT PACKAGE SUBMITTED
07/79 -DRAFT FINAL REPORT DUE
10/79 -FINAL REPORT DUE

PROGRAM ID...: (PE-610) MINERALS PROCESSING AND MANUFACTURING INDUSTRIES

MANDATE.......: 20-14 DAA FOR SOLID WASTE
20-11 DAA FOR WATER PLANNING AND STANDARDS

ORDIS CODES..: RECN-000294	SSIE-GMA 3072 3	EPA -R804568-02	TASK-B610C-171
ORD -RB10B30-2079	MAND-20-14	MAND-20-11	
PE -610		LABT-EET	

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: TO EXTEND THE APPLICATION OF THE LIME-SULFIDE COMBINATION PROCESS TO INCLUDE TREATMENT OF SCRUBBER WASTEWATERS CONTAINING VERY HIGH ARSENIC AND COPPER, AND MODERATE CONCENTRATIONS OF CD, ZN, FE, PB, ETC. THE EXPERIMENTAL STUDY WILL ALSO INCLUDE SELECTIVE METAL RECOVERY FROM THE PRECIPITATED SLUDGE. APPROACH: CONTINUOUS-FLOW, COMBINATION LIME-SULFIDE PRECIPITATION STUDIES WILL ALSO INCLUDE SCRUBBER WATERS GENERATED FROM NORANDA CONTINOUS SMELTING PROCESS AND FROM ELECTRIC SMELTING OPERATION. FOR WASTEWATERS CONTAINING LOW FE/AS, THE USE OF PARTIAL SLUDGE, ADDITION OF FERRIC SALT, AND PRECIPITATION WITH FES PLUS NA2S, WILL BE STUDIED TO ENHANCE ARSENIC SEPARATION. BOTH BATCH AND CONTINUOUS EXPERIMENTS WILL BE USED TO STUDY METAL RECOVERY FROM THE SLUDGE.

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U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R-804570-63

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Sewage Sludge--Viral and Pathogenic Agents in Soil-Plant-Animal Systems

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Principal Investigator
J. M. Davidson (Professor of Soil Sci.)
G. T. Edds (Professor of Veterinary Sci.)

Professional Personnel
18 from four colleges
(See grant proposal)

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Florida
Gainesville, Florida 32611

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Incorporation of urban sewage sludge into cattle, swine, and poultry rations to provide metallic element concentrations similar to those measured in forage or grain harvested from soils pretreated with sewage sludge have not produced adverse effects on animal growth or performance. Additions of sludge at two or more times these amounts has produced no acute effects; however, ingestion for more extended periods resulted in clinical chemistry changes suggesting that some tissue or organ enzyme systems have been affected. Because urban sewage sludge treated rations have been relatively free of drugs, chemicals, parasite ova, microorganisms and pesticides, the observed tissue enzyme changes probably have resulted from the accumulation of metallic elements (lead, cadmium, nickel or chromium) is tissues, especially in the liver and kidney. Trials are currently in progress where mice are being fed liver and kidney tissue from animals fed rations fed sewage sludge. The risk of contaminating groundwater supplies by applying municipal sludges to land was evaluated using various Florida soils. The finer textured soil adsorbed more poliovirus type 1 (Sabin) than a sandy soil and showed significantly less virus movement because of the adsorption. No groundwater contamination by viruses has been shown in field plots at Jay, Florida receiving sludge for five years.

*PROJECT: 000812-GRANULAR ACTIVATED CARBON STUDIES

STARTING/ COMPLETION DATE : 08/76 - 05/80 : FY79
TASK CODE=C824A-01T41 **EPA=R804571 ** (GRANT)

EPA OFFICER.: J DEMARCO — EPA/MERL - CINC — 513-684-7282
INVESTIGATOR.: NV BRODTMANN — JEFFERSON WATER DEPT
DB GREENBERG — JEFFERSON WATER DEPT
LR COLLINS — JEFFERSON WATER DEPT
JP RYAN — GULF SOUTH RESEARCH INST
PROGRAM ID...: (PE-824) DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 10-09 REORGANIZATION PLAN # 3
10-03 TOXIC SUBSTANCES CONTROL ACT
10-05 RESOURCE CONSERVATION AND RECOVERY ACT
10-02 CLEAN AIR ACT
CURR. RESULTS: PERFORMANCE OF FILTER/ADSORBERS COMPLETED. GOOD CORRELATION BETWEEN UNITS FOR MOST PARAMETERS INVESTIGATED.

ORDIS CODES..:				
	RECN-000812	SSIE-GMA 3073 3	EPA -R804571	TASK-C824A-01T41
	ORD -RC10B30-1079	LABN-C614A-7151	MAND-10-09	
	MAND-10-03	MAND-10-05	MAND-10-02	PE -824
		LABT-EET		
PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: BECAUSE OF GROWING PUBLIC CONCERN OVER THE OCCURRENCE OF TRACE AMOUNTS OF VARIOUS ORGANIC CHEMICALS IN THE AREA POTABLE WATER SUPPLY, THE JEFFERSON PARISH WATER DEPARTMENT HAS RECOGNIZED THE NEED FOR A MORE EFFICIENT AND RELIABLE TREATMENT PROCESS DESIGNED TO REMOVE SUCH CONTAMINANTS. THE MISSISSIPPI RIVER IS THE SOLE RAW WATER SOURCE AVAILABLE TO JEFFERSON PARISH WATER SYSTEM. THEREFORE, SINCE THE USE OF ANOTHER LESS POLLUTED SOURCE IS IMPOSSIBLE, THE DEPARTMENT IS FACED ONLY WITH SEEKING OUT NEW METHODS FOR REMOVAL OF TRACE LEVELS OF ORGANIC CONTAMINANTS. APPROACH: ONE SUCH METHOD OFFERS THE MOST PROMISE OF EFFECTING TRACE ORGANIC COMPOUND REMOVAL. IT IS THE USE OF GRANULAR ACTIVATED CARBON (GAC) FILTRATION. GAC FILTRATION WILL BE THOROUGHLY STUDIED IN QUANTITATIVE TERMS AND IN TERMS OF COST EFFECTIVENESS DURING THE COURSE OF THIS STUDY. RESULTS TO DATE: PERFORMANCE OF FILTER/ADSORBERS COMPARED TO ADSORBERS HAS BEEN COMPLETED. A PRELIMINARY COMPARISON OF PILOT CARBON COLUMN WITH FULL-SCALE CARBON BED PERFORMANCE INDICATES A GOOD CORRELATION BETWEEN THE UNITS FOR MOST PARAMETERS INVESTIGATED TO DATE WHICH INCLUDE TOC, THMFP, RFM, CHLOROFORM, AND 1,2 DICHLOROETHANE.

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*PROJECT: 004328-NEW APPROACHES TO THE PRESERVATION OF CONTAMINANTS IN WATER SAMPLES

                    STARTING/ COMPLETION DATE : 09/77 - 03/79 :    FY79
                    TASK CODE=A801 -78      **EPA=R804609-01  ** (GRANT)
 EPA  OFFICER.: GF SIMES                    EPA/EMSL - CINC                 513-684-7326
 INVESTIGATOR.: J  SAXENA                   SYRACUSE RESEARCH CORP
                E  NITES                    SYRACUSE RESEARCH CORP
 MILESTONES...: 09/77 -EVALUATION OF WATER/WASTEWATER CONTROLLING ANTIBIOTICS
                09/78 -EVALUATE EFFECTIVENESS OF PRESERVATIVES
                03/79 -FINAL REPORT FOR PUBLICATION
 PROGRAM ID...: (PE-801 )            QUALITY ASSURANCE
 MANDATE......: 10-01      FEDERAL WATER POLLUTION CONTROL ACT
                10-03      TOXIC SUBSTANCES CONTROL ACT
                10-11      MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT
                30-99      MICROBIOLOGY
 CURR. RESULTS: FINAL REPORT APPROVED AND SUBMITTED FOR PUBLICATION
                IN ENVIRONMENTAL MONITORING SERIES.
 ORDIS CODES..: RECN-004328        SSIE-GMA  5624       EPA -R804609-01       TASK-A801 -78
                ORD -RA10B30-5079  LABN-A621A-42        MAND-10-01
                MAND-10-03         MAND-10-11           MAND-30-99            PE  -801
                                   LABT-MTS
 PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH    DATA-UPDATED          UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
 ABSTRACT.....: OBJECTIVE: DEVISE A NEW, MORE EFFECTIVE AND POLLUTION-FREE METHOD OF PRESERVATION OF
                  WATER/WASTEWATER SAMPLES. APPROACH: ANTIBIOTICS AND BACTERIOLYTIC ENZYMES SHALL BE STUDIED FOR
                  CONTROLLING MICROORGANISMS AND SUBSEQUENTLY BIOCHEMICAL CHANGES OF POLLUTANTS. RESULTS TO DATE:
                  FINAL REPORT APPROVED AND SUBMITTED FOR PUBLICATION IN ENVIRONMENTAL MONITORING SERIES.
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*PROJECT: 004783-CO-CARCINOGENIC POTENTIAL OF ARSENIC IN DRINKING WATER

STARTING/ COMPLETION DATE : 10/76 - 10/79 : FY79
TASK CODE=D823B-044C **EPA=R804610-02 ** (GRANT)

EPA OFFICER.: RJ BULL EPA/HERL - CINC 513-684-7213
INVESTIGATOR.: DY SHIRACHI UNIV OF THE PACIFIC
JU LAKSO UNIV OF THE PACIFIC
S TU UNIV OF THE PACIFIC
MILESTONES...: 07/79 -DETERMINATION OF CO-CARCINOGENIC POTENTIAL OF ARSENIC
PROGRAM ID...: (PE-823) HEALTH EFFECTS
MANDATE......: 10-15 SAFE DRINKING WATER ACT
CURR. RESULTS: DETERMINED CYTOTOXICITY OF ARSENIC COMPOUNDS AND BENZPYRENE.
ORDIS CODES..: RECN-004783 SSIE-GMA 5775 EPA -R804610-02 TASK-D823B-044C
ORD -RD10B30-1079 MAND-10-15 PE -823
LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: OUR PRINCIPAL OBJECTIVE IS TO DETERMINE IF THE LINK BETWEEN ARSENIC AND CANCER COULD OCCUR IF ARSENIC WERE TO ACT AS A COCARCINOGEN, CONCURRENT WITH THE BIOCHEMICAL COCARCINOGENICITY OF THE FOLLOWING ARSENIC SPECIES. APPROACH: WE HAVE DEVELOPED A METHOD FOR QUANTITATIVELY MEASURING THE FOUR ARSENIC SPECIES WHICH ARE COMMONLY FOUND IN DRINKING WATER (ARSENITE (AS+3), ARSENATE (AS+5), METHYLARSENIC ACID (MA), AND DIMETHYLARSENIC ACID (DMA). WITH THIS NEW METHOD WE HAVE BEEN NOTING THE CHANGES AS+3 AND AS+5 UNDERGO WHEN ADDED TO LIVER ENZYME FRACTIONS. WE HAVE FOUND THAT AS+5 BECOMES METHYLATED. WE ARE PRESENTLY MAPPING THE METABOLIC ROUTE AND REACTION CONDITIONS REQUIRED FOR METHYLATION. RESULTS TO DATE: DURING THE FIRST PHASE OF METHOD DEVELOPMENT WE DETERMINED THE CYTOTOXICITY OF THE ABOVE ARSENIC COMPOUNDS AND A KNOWN CARCINOGEN, BENZPYRENE. THESE CHEMICALS WERE TESTED SEPARATELY AND IN COMBINATION SO APPROPRIATE CONCENTRATIONS WERE SELECTED FOR THE SECOND OR CELL TRANSFORMATION PHASE OF THE STUDY. DURING THIS PHASE WE ARE COMBINING THE BENZPYRENE (NON-CARCINOGENIC CONCENTRATIONS) WITH THE ABOVE FORMS OF ARSENIC (NON-LETHAL CONCENTRATIONS) AND OBSERVING IF CELL TRANSFORMATION OCCURS. IN THE THIRD PHASE, WE WILL INJECT THE TRANSFORMED CELLS INTO ATHYMIC AND/OR DEXAMETHASONE TREATED MICE TO OBSERVE IF TUMORIGENESIS OCCURS.

*PROJECT: 005245-MICROCOSM AND THEORETICAL EVALUATION OF SUBSTITUTE CHEMICALS

STARTING/ COMPLETION DATE : 09/76 - 10/79 : FY79
TASK CODE=N714A-0003 **EPA=R804622-03 ** (GRANT)

EPA OFFICER.: J EATON — EPA/ERL - DULUTH — 218-727-6692 E
INVESTIGATOR.: C WARREN — OREGON STATE UNIV — SCH OF AGRIC/ENTOMOLOGY DEPT
MILESTONES...: 09/76 -COMPLETE CONSTRUCTON OF TEST SYSTEM AND ADD ORGANISMS
04/78 -ADD PESTICIDE TO TEST SYSTEMS AND BEGIN COLLECTION OF PERTURBED SYSTEM DATA
09/79 -COMPLETE ALL EXPERIMENTAL WORK
10/79 -COMPLETE DRAFT FINAL REPORT
PROGRAM ID...: (PE-714) ECOLOGICAL PROCESSES AND EFFECTS
MANDATE......: 10-06 FEDERAL INSECTICIDE, FUNG. AND RODENT. ACT
20-34 DAA FOR PESTICIDE PROGRAMS
30-99 ECOLOGY; TOXICOLOGY
CURR. RESULTS: METHODS DEVELOPED FOR ESTABLISHING SELF-PERPETUATING POPULATIONS OF MIXED ORGANISMS.

ORDIS CODES..:	RECN-005245	SSIE-GMA 6113	EPA -R804622-03	TASK-N714A-0003
	ORD -RN10830-5079	MAND-10-06	MAND-20-34	
	MAND-30-99	PE -714		LABT-EPE
PROJ STATUS..:	PROJECT-ACTIVE	CATEGORY-RESEARCH	DATA-ORIGINAL	UPDATED- OCT-DEC 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: TO DETERMINE THE DYNAMICS OF POPULATIONS OF FISH AND PREY ORGANISMS INTERACTING IN LABORATORY ECOSYSTEMS. TO DETERMINE THE ADEQUACY OF SIMPLE, MORE GENERALLY EMPLOYED SINGLE SPECIES EXPOSURES TO PREDICT EFFECTS IN MORE COMPLEX ECOLOGICAL SYSTEMS. APPROACH: TO DETERMINE THE EFFECT OF A PESTICIDE ON MICROCOSMS CONTAINING GUPPIES AND PREY ORGANISMS (AMPHIPODS, COPEPODS, AND MICROORGANISMS) AND TO COMPARE THESE DATA TO THE RESULTS OF ANCILLARY EXPOSURES OF THE SAME ORGANISMS IN SINGLE SPECIES TESTS.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

PROJECT NO. (*Do not use this space*)
SSIE
EPA R804647-02

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT: Formation of Carcinogenic Photooxidation Products From Polyaromatic Hydrocarbons at the Air-Sea Interface

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

See Attached Page

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of New Orleans, Center for Bio-Organic Studies
New Orleans, Louisiana 70122

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

There is a growing concern that the photo-reaction of crude oils and their components in sunlight presents serious threats to man and animals as evidenced by several hundred toxicological studies on carcinogenicity, mutugenicity and other physiological studies of various petroleum PAH's and their oxygenated products such as phenols, diols, epoxides and diol-epoxides.

The photooxidation of petroleum polycyclic aromatic hydrocarbons (PAH's) will be carried out in the presence of naturally occurring photosensitizers and oxygen under simulated environmental conditions leading to the formation of an air-sea interface (tiny sea-water droplets formed by wind and waves on the sea surface) with a lamp whose output is similar to the solar spectrum. Products will be submitted to EPA for bioassay.

The photo-products will be separated and identified by gas chromatograph-mass spectrometer-computer system and the structural confirmation will be achieved by the comparison of GC retention time and mass spectral fragmentation patterns data with similar data from independently syntherized authentic samples. The half-life and reactivity of each primary and secondary photo-products will be determined.

A considerable amount of work has been done on the photooxidation of phenanthrene, a model petroleum polycyclic aromatic hydrocarbon in various conditions. The different classes of primary and secondary photo-oxygenated products of phenanthrene were separated and identified by GC-MS-COMP system. The determination of water soluble and insoluble compounds had been also made. Among the various photosensitizers evaluated, a naturally occurring PAH present in crude oils, was found to be an effective photosensitizer. The reactions were compared with identical reactions using known dyes photosensitizers such as Rose Bengal and Methylene Blue. In the current research primary emphasis will be on PAH's that are known to be associated with a carcinogenic response in animals and/or man.

*PROJECT: 004645-VEGETATIVE STABILIZATION OF SPENT OIL SHALES

STARTING/ COMPLETION DATE : 10/76 - 07/80 : FY79
TASK CODE=B623B-358 **EPA=R804719-02 ** (GRANT)

EPA OFFICER.: ER BATES — EPA/IERL - CINC
INVESTIGATOR.: WA BERG — COLORADO STATE UNIV — SCH OF AGRIC SCI
JT HERRON — COLORADO STATE UNIV — SCH OF AGRIC SCI
MILESTONES...: 07/80 -FINAL REPORT RECEIVED
PROGRAM ID...: (PE-623) EXTRACTION AND PROCESSING TECHNOLOGY
MANDATE.......: 20-14 DAA FOR SOLID WASTE
20-R08 EPA REGION VIII
30-99 CIVIL ENGINEERING
CURR. RESULTS: ONE REPORT DESCRIBES SUCCESS IN REVEGETATING TOSCO AND USBM SPENT SHALES ISSUED; DRAFT REPORT ON REVEGETATING PARAHO SPENT SHALE RECEIVED.

ORDIS CODES..: RECN-004645	SSIE-GMA 5945	EPA -R804719-02	TASK-B623B-358
ORD -RB10B30-5079	MAND-20-14	MAND-20-R08	
MAND-30-99	PE -623		LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: TO INVESTIGATE SURFACE STABILITY OF AND SALT MOVEMENT IN FINE-TEXTURED (TOSCO), MODERATELY COARSE-TEXTURED (U. S. BUREAU OF MINES GAS COMBUSTION PROCESS), AND COARSE-TEXTURED (PARAHO DIRECT PROCESS) SPENT SHALES AND SPENT SHALES COVERED WITH SOIL AFTER VEGETATION HAS BEEN ESTABLISHED BY INTENSIVE TREATMENTS AND THEN LEFT UNDER NATURAL PRECIPITATION CONDITIONS. APPROACH: FIELD PLOTS HAVE BEEN ESTABLISHED IN THE COLORADO OIL SHALE REGION USING THE ABOVE SPENT OIL SHALES, SOIL-COVER OVER THE SPENT SHALES AND SOIL CONTROLS. THE PLOTS HAVE SURFACE RONOFF COLLECTORS SO THE QUANTITY AND QUALITY OF RUNOFF CAN BE MEASURED. VEGETATIVE SURVEYS ARE MADE PERIODICALLY TO DETERMINE REVEGETATION SUCCESS. RESULTS TO DATE: ONE REPORT DESCRIBES SUCCESS IN REVEGETATING TOSCO AND USBM SPENT SHALES AND HAS BEEN ISSUED AS REPORT EPA-600/7-78-021; A DRAFT REPORT ON REVEGETATING PARAHO SPENT SHALE HAS BEEN RECEIVED.

*PROJECT: 001023-VIRUS-SOIL INTERACTIONS

STARTING/ COMPLETION DATE : 10/76 - 10/80 : FY79
TASK CODE=D607A-004C **EPA=R804743-02 ** (GRANT)

EPA OFFICER.:	EW AKIN	EPA/HERL - CINC	513-684-7383
INVESTIGATOR.:	GW FUHS	HLTH RES INC	
	GW FUHS	STA DIV OF LABS/RES	DEPT OF HLTH
	R DEIBEL	STA DIV OF LABS/RES	DEPT OF HLTH
	LF STURMAN	STA DIV OF LABS/RES	DEPT OF HLTH
	MJ WOLIN	STA DIV OF LABS/RES	DEPT OF HLTH
	MM REDDY	STA DIV OF LABS/RES	DEPT OF HLTH
	M CHEN	STA DIV OF LABS/RES	DEPT OF HLTH
	TJ TOFFLEMIRE	STATE DEPT OF ENV CONSRV	

MILESTONES...: 05/78 -REPORT
10/78 -REPORT
10/79 -REPORT
10/80 -FINAL REPORT

PROGRAM ID...: (PE-607) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS

MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT

CURR. RESULTS: INTERACTION OF RADIOLABELED POLIOVIRUS 2 WITH FIVE SOIL SUBSTRATES PRODUCED MAXIMUM ADSORPTION UNDER ACIDIC CONDITIONS. BASED ON RESULTS SUBSTRATES WOULD REMOVE POLIOVIRUS FROM WATER IN FOLLOWING ORDER:
MONTMORILLONITE, SILT, SANDY LOAM, OTTAWA SAND, MUCK.

ORDIS CODES..:	RECN-001023	SSIE-GMA 3449 2	EPA -R804743-02	TASK-D607A-004C
	ORD -RD10B30-1079	LABN-D607A-015	MAND-10-01	
	PE -607		LABT-OHR	

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: THE PARAMETERS AFFECTING RETENTION AND INACTIVATION OF VIRUS IN SOILS WILL BE FURTHER DEFINED AND EVALUATED. GUIDELINES FOR THE PREDICTION OF VIRUS POLLUTION OF GROUNDWATER AND OTHER DRINKING WATER FROM RECHARGE WILL BE DEVELOPED AS FUNCTIONS OF VIRUS AND SOIL TYPES, THE COMPOSITION OF PERCOLATION MEDIUM, AND A VARIETY OF ORGANIC COMPONENTS, COATINGS, AND BIOLOGICAL FILMS. VIRUSES REPRESENTATIVE OF THE IMPORTANT BASIC TYPES OF ANIMAL VIRUSES (GLYCOPROTEIN-CONTAINING AND ICOSAHEDRAL TYPES) WILL BE UTILIZED IN ADSORPTION EXPERIMENTS OF THE BATCH AND COLUMN TYPES WITH RADIOACTIVE MEASUREMENTS OF LABELED VIRUS AND TESTS FOR INFECTIVITY AS INDICATORS OF VIRUS MOVEMENT AND INACTIVATION, RESPECTIVELY. EXPERIMENTS WILL BE CONDUCTED WITH PURE REFERENCE MINERALS, REFERENCE MINERALS WITH ORGANIC COATINGS, BIOLOGICAL FILMS MOSTLY CONSISTING OF BACTERIAL EXOPOLYMER, AND STERILE AND NATURAL SOILS OF SEVERAL CHARACTERISTIC TYPES. A NUMBER OF RELATED FACTORS SUCH AS ADSORPTION TO ORGANIC PARTICULATES PRIOR TO SOIL PERCOLATION, AND COMPLEX BIOLOGICAL INTERACTIONS WILL ALSO BE STUDIED. RESULTS TO DATE: THE INTERACTION OF RADIOLABELED POLIOVIRUS 2 WITH FIVE SOIL SUBSTRATES PRODUCED MAXIMUM ADSORPTION UNDER ACIDIC CONDITIONS. SILT AND MONT MORILLONITE EXHIBITED THE GREATEST ADSORPTION WITH 97 PERCENT OF VIRAL INFECTIVITY LOST IN THE RANGE OF PH 4 TO 9. BASED UPON THE EXPERIMENTAL RESULTS, THESE SUBSTRATES WOULD REMOVE POLIOVIRUS FROM WATER IN THE FOLLOWING ORDER: MONTMORILLONITE GREATER THAN SILT GREATER THAN SANDY LOAM GREATER THAN OTTAWA SAND GREATER THAN MUCK.

*PROJECT: 004818-THE CONTINUOUS MONITORING OF PARTICULATE SULFUR COMPOUNDS BY FLAME PHOTOMETRY
STARTING/ COMPLETION DATE : 10/77 - 10/79 : FY79
TASK CODE=G712B-BB-082 **EPA=R804750-02 ** (GRANT)

EPA OFFICER.: R STEVENS — EPA/ESRL - RTP — 919-541-3156
INVESTIGATOR.: JJ NUTZICKER — OREGON GRADUATE CTR — DEPT OF ENV TECH
PROGRAM ID...: (PE-712) — CHARAC. & MEASUREMENT METHODS DEVELOPMENT
ORDIS CODES..: RECN-004818 — SSIE-GMA 5786 — EPA -R804750-02 — TASK-G712B-BB-082
PE -712 — LABT-EPE
PROJ STATUS..: PROJECT-ACTIVE — CATEGORY-RESEARCH — DATA-ORIGINAL — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: DEVELOPMENT OF AN INSTRUMENT CAPABLE OF BOTH CONTINUOUSLY MONITORING PARTICULATE SULFUR AND DISTINGUISHING AMONG THE DIFFERENT CHEMICAL COMPOUNDS OF SULFUR. APPROACH: SULFUR IS DETECTED BY THE LUMINESCENCE RESULTING FROM COMBUSTION OF SULFUR COMPOUNDS IN A HYDROGEN RICH FLAME. SULFUR GASES ARE REMOVED FROM THE SAMPLE STREAM BY A DIFFUSION TUBE SCRUBBER. THE PRINCIPAL CONSTITUENTS OF ATMOSPHERIC SULFUR PARTICULATES, H2SO4 AND AMMONIUM (BI) SULFATE, ARE INDIVIDUALLY REMOVED FROM THE SAMPLE STREAM BY A THERMAL SPECIATION. THERMAL SPECIATION EMPLOYS A HEATED TUBE IN WHICH THE PARTICULATES CAN BE TRANSFERRED TO GASES AND REMOVED AT THEIR VAPORIZATION TEMPERATURES. RESULTS TO DATE: AN AUTOMATIC PARTICULATE SULFUR MONITOR HAS BEEN COMPLETED WHICH USES SEQUENTIAL REMOVAL OF SULFUR COMPOUNDS (AS DESCRIBED ABOVE) AND REAL-TIME DATA HANDLING BY MICRO-PROCESSOR ELECTRONICS. THE INSTRUMENTS PERMIT NEAR REAL-TIME MEASUREMENTS OF TOTAL SULFUR PARTICULATE, TOTAL MINUS SULFURIC ACID AND TOTAL MINUS AMMONIUM SULFATE.

*PROJECT: 001642-THE CONTINUOUS MONITORING OF PARTICULATE SULFUR COMPOUNDS BY FLAME PHOTOMETRY
STARTING/ COMPLETION DATE : 08/76 - 12/81 : FY79
TASK CODE=G712B-BB-82 **EPA=R804750-02 ** (GRANT)

EPA OFFICER.: RK STEVENS — EPA/ESRL - RTP — 919-541-3456
INVESTIGATOR.: JJ HUNTZICKER — OREGON GRADUATE CTR — DEPT OF ENV TECH
MILESTONES...: 07/79 -COMPLETE DEVELOPMENT OF FLAME PHOTOMETRIC DETECTION
PROGRAM ID...: (PE-712) — CHARAC. & MEASUREMENT METHODS DEVELOPMENT
ORDIS CODES..: RECN-001642 — SSIE-GMA 3281 2 — EPA -R804750-02 — TASK-G712B-BB-82
PE -712 — LABT-EPE
PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-BEING UPDATED — UPDATED- OCT-DEC 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: 1. DEVELOP FIELD MONITOR TO MEASURE ATMOSPHERIC CONCENTRATIONS OF PARTICULATE SULFUR COMPOUNDS WITH A FLAME PHOTOMETRIC DETECTOR. 2. COMPLETE DEVELOPMENT OF MICROPROCESSOR TO COMPLETELY AUTOMATE ANALYSIS AND DATA REDUCTION. APPROACH: 1. DEVELOP GAS DENUDERS TO REMOVE GASEOUS SULFUR SPECIES AND H2SO DENUDE TO DIFFERENTIATE BETWEEN SULFURIC ACID AND OTHER AEROSOL SULFATES. 2. NEED TO DEVELOP HARDWARE AND SOFTWARE FOR DATA REDUCTION.

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*PROJECT: 000194-MICROWAVE SYSTEM TO PREVENT HAZARDOUS MATERIAL DIKE FAILURES

                   STARTING/ COMPLETION DATE : 09/76 - 10/79 :   FY78
                   TASK CODE=B610A-192    **EPA=R804763-03  ** (GRANT)
  EPA  OFFICER.: JE BRUGGER               EPA/IERL - CINC
  INVESTIGATOR.: RM KOERNER               DREXEL UNIV
                 AE LORD                  DREXEL UNIV
  MILESTONES...: 07/79 -COMPLETE PROJECT
                 10/79 -FINAL REPORT RECEIVED
  PROGRAM ID...: (PE-610 )          MINERALS PROCESSING AND MANUFACTURING INDUSTRIES
  FINAL OUTPUT.: MOBILE MICROWAVE UNIT TO DETERMINE UNDERGROUND
                 WATER, IRREG., & DISCONTINUITIES IN EARTHEN DIKES.
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
                 20-99     DOSMC, OW&HM,DC
  ORDIS CODES..: RECN-000194         SSIE-GMA  3609 2       EPA -R804763-03       TASK-B610A-192
                 ORD -RB10B30-5078   MAND-10-01             MAND-20-99
                 PE  -610                                   LABT-EET

  PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH      DATA-UPDATED          UPDATED-  OCT-DEC 77
                                     ACCESS-PUBLIC
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ABSTRACT.....: THE DETECTION AND LOCATION OF WATER LEVELS, WATER POCKETS, VOIDS AND VARIOUS OTHER DISCONTINUITIES BETWEEN DIFFERENT LAYERS OF EARTH OR ROCK IS CRITICAL IN INSURING THE PERFORMANCE AND SAFETY OF EARTH DAMS. SUCH UNDERGROUND ANOMALIES ARE PARTICULARLY UNDESIRABLE IN THE EARTH DAMS AND DIKES THAT CONTAIN HAZARDOUS MATERIALS SINCE THESE RELATIVELY SMALL EMBANKMENTS ARE GENERALLY NOT ENGINEERED OR CONSTRUCTED IN A RIGOROUS AND PROFESSIONAL MANNER. ONE POSSIBLE TECHNIQUE FOR DETECTING AND MONITORING SUCH FAULTS AND WEAK AREAS IS THE USE OF MICROWAVES. BY BEAMING CONTINUOUS OR PULSED MICROWAVES AT THE DIKE AND RECORDING THE RETURN SIGNAL AS IT IS REFLECTED FROM THE ANOMALY, THE LOCATION, TYPE AND DEPTH OF FAULTS CAN BE DETERMINED. A LITERATURE SEARCH (TECHNICAL, EQUIPMENT, LEGAL AND SAFETY) WILL BE UNDERTAKEN AND A NUMBER OF LABORATORY EXPERIMENTS WILL BE PERFORMED TO ASSESS THE PRACTICALITY OF USING MICROWAVES FOR THE NON-DESTRUCTIVE ASSESSMENT OF DIKE STABILITY. BASIC SOIL PROPERTIES SUCH AS DIELECTRIC CONSTANT, CONDUCTIVITY, ATTENUATION, PHASE SHIFT, AND VELOCITY WILL ALSO BE DETERMINED. THE FINAL RESULT OF THIS PROJECT WILL BE THE DETAILED SPECIFICATION FOR AN INEXPENSIVE, MOBILE, MICROWAVE UNIT (WITH KNOWN LIMITATIONS) TO DETERMINE UNDERGROUND WATER, IRREGULARITIES, AND DISCONTINUITIES IN SMALL EARTHEN DIKES.

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*PROJECT: 001832-AN INVESTIGATION OF THE REACTIONS OF AROMATIC HYDROCARBONS IN
                 PHOTOCHEMICAL AIR
                      STARTING/ COMPLETION DATE : 11/76 - 04/80 :   FY79
                      TASK CODE=G603A-AC-026 **EPA=R804764-03  ** (GRANT)
  EPA  OFFICER.: M  DODGE                EPA/ESRL - RTP                    919-541-2374
  INVESTIGATOR.: RJ OBRIEN               PORTLAND STATE UNIV               ARTS & SCI/CHEM DEPT
  MILESTONES...: 04/80 -FINAL REPORT
  PROGRAM ID...: (PE-603 )         HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
  MANDATE......: 10-02      CLEAN AIR ACT
  CURR. RESULTS: PRODUCT YIELDS DETERMINED FOR BENZALDEHYDE, O-CREOSOL,
                 NITROTOLUENE AND BENZYLNITRATE.
  ORDIS CODES..: RECN-001832          SSIE-GMA  3861 2       EPA -R804764-03       TASK-G603A-AC-026
                 ORD -RG10830-1079    LABN-G603A-AC-012      MAND-10-02
                 PE  -603                                    LABT-EPE

  PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH      DATA-UPDATED          UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS STUDY IS TO IDENTIFY THE INTERMEDIATE AND FINAL PRODUCTS FORMED WHEN AROMATIC HYDROCARBONS ARE IRRADIATED WITH OXIDES OF NITROGEN UNDER SIMULATED ATMOSPHERIC CONDITIONS. APPROACH: REACTIONS OF SEVERAL IMPORTANT AROMATIC CONSTITUENTS OF GASOLINE UNDER PHOTOCHEMICAL SMOG CONDITIONS WILL BE STUDIED. THESE HYDROCARBONS INCLUDE BENZENE, TOLUENE, XYLENE, AND MESITYLENE. REACTION PRODUCTS WILL BE IDENTIFIED AND QUANTIFIED. A COMPUTER MODEL OF THE REACTIONS OF TOLUENE WILL BE DEVELOPED AND VALIDATED AGAINST EXPERIMENTAL DATA. THE GOAL OF THE MODEL WILL BE TO EXPLAIN THE DECOMPOSITION OF TOLUENE UNDER ATMOSPHERIC CONDITIONS, AND TO EVALUATE ITS CONTRIBUTION TO PHOTOCHEMICAL OXIDANT PRODUCTION IN URBAN ATMOSPHERES. RESULTS TO DATE: PRODUCT YIELDS HAVE BEEN DETERMINED FOR THE FOLLOWING PRODUCTS OF TOLUENE OXIDATION: BENZALDEHYDE, O-CRESOL, NITROTOLUENE AND BENZYLNITRATE.

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*PROJECT: 001798-AN INVESTIGATION OF THE REACTIONS OF AROMATIC HYDROCARBONS IN PHOTOCHEMICAL AIR POLLUTION
STARTING/ COMPLETION DATE : 09/76 - 04/80 : FY79
TASK CODE=G603A-AC-026 **EPA=R804764-03 ** (GRANT)

EPA OFFICER.: MC DODGE EPA/ESRL - RTP 919-541-2374
INVESTIGATOR.: RJ OBRIEN PORTLAND STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 04/80 -FINAL REPORT
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: PRODUCT YIELDS DETERMINED FOR BENZALDEHYDE, O-CREOSOL, NITROTOLUENE AND BENZYLNITRATE.
ORDIS CODES..: RECN-001798 SSIE-GMA 3864 2 EPA -R804764-03 TASK-G603A-AC-026
ORD -RG10B30-1079 LABN-G603A-AC-012 MAND-10-02
PE -603 LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS STUDY IS TO IDENTIFY THE INTERMEDIATE AND FINAL PRODUCTS FORMED WHEN AROMATIC HYDROCARBONS ARE IRRADIATED WITH OXIDES OF NITROGEN UNDER SIMULATED ATMOSPHERIC CONDITIONS. APPROACH: REACTIONS OF SEVERAL IMPORTANT AROMATIC CONSTITUENTS OF GASOLINE UNDER PHOTOCHEMICAL SMOG CONDITIONS WILL BE STUDIED. THESE HYDROCARBONS INCLUDE BENZENE, TOLUENE, XYLENE, AND MESITYLENE. REACTION PRODUCTS WILL BE IDENTIFIED AND QUANTIFIED. A COMPUTER MODEL OF THE REACTIONS OF TOLUENE WILL BE DEVELOPED AND VALIDATED AGAINST EXPERIMENTAL DATA. THE GOAL OF THE MODEL WILL BE TO EXPLAIN THE DECOMPOSITION OF TOLUENE UNDER ATMOSPHERIC CONDITIONS, AND TO EVALUATE ITS CONTRIBUTION TO PHOTOCHEMICAL OXIDANT PRODUCTION IN URBAN ATMOSPHERES. RESULTS TO DATE: PRODUCT YIELDS HAVE BEEN DETERMINED FOR THE FOLLOWING PRODUCTS OF TOLUENE OXIDATION: BENZALDEHYDE, O-CRESOL, NITROTOLUENE AND BENZYLNITRATE.

'ROJECT: 004404-ULTRAVIOLET DISINFECTION OF FILTERED & UNFILTERED SECONDARY EFFLUENT

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                  STARTING/ COMPLETION DATE : 12/76 - 03/80 :    FY79
                  TASK CODE=C822B-03TA11 **EPA=R804770     ** (GRANT)
EPA  OFFICER.: AD VENOSA              EPA/MERL - CINC                 513-684-7668
INVESTIGATOR.: JD JOHNSON             UNIV OF NORTH CAROLINA          SCH OF PUBLIC HLTH
MILESTONES...: 12/76 -PROJECT START
               11/78 -INTERIM REPORT PUBLISHED (SYMPOSIUM)
               03/79 -AMENDMENT APPROVED
PROGRAM ID...: (PE-822 )          POINT SOURCE TECH DEV (WASTEWATER SYS)
MANDATE......: 30-99     MICROBIOLOGY ¦ CIVIL ENGINEERING
CURR. RESULTS: COMPARISON OF 2 UV UNITS COMPLICATED BY HYDRALIC
               INEFFICIENCIES OF THIN FILM UNIT.  CONCLUSIONS NOT POSSIBLE.
ORDIS CODES..: RECN-004404        SSIE-GMA  5635      EPA -R804770        TASK-C822B-03TA11
               ORD -RC10B30-3079  MAND-30-99          PE  -822
                                  LABT-EET

PROJ STATUS..: PROJECT-ACTIVE     CATEGORY-RESEARCH   DATA-ORIGINAL       UPDATED-  JUL-SEP 79
                                  ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: BECAUSE THE CONVENTIONAL METHOD OF MEASURING UV DOSE BY MULTIPYING AN OBSERVED INTENSITY BY THE EXPOSURE TIME HAS BEEN FOUND TO BE INADEQUATE, THIS EXTENSION WAS GIVEN TO DEVELOP A BETTER MEANS OF MEASURING UV DOSE. ALSO, THE KINETICS OF UV DISINFECTION IN UNCOMPLICATED GEOMETRIES WILL BE STUDIED IN GREATER DETAIL THAN PREVIOUSLY. THICKNESS OF WATER WALL WILL BE EVALUATED TO QUANTIFY THE EFFECT OF DEPTH ON UV DISINFECTION PERFORMANCE. APPROACH: SIMULATION OF THE ABSORBANCE CHARACTERISTICS OF WASTEWATER WILL BE ACHIEVED BY USE OF LOW ABSORBANCE FERRIOXALATE ACTINOMETRY. DOSE-RESPONSE RELATIONSHIPS WILL THEN BE ESTABLISHED WITH PURE CULTURES OF ESCHERICHIA COLI. A LABORATORY SCALE REACTOR WILL BE USED TO MEASURE EFFECTS OF WATER DEPTH AND TURBIDITY. RESULTS TO DATE: COMPARISON OF 2 UV UNITS WAS COMPLICATED BY HYDRAULIC INEFFICIENCIES OF THE THIN FILM UNIT. CONSEQUENTLY, IT WAS NOT POSSIBLE TO REACH CONCLUSIONS ON LAMP CONFIGURAIION AND ITS EFFECT ON DISINFECTION PERFORMANCE.

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*PROJECT: 001061-THE FATE OF HUMAN VIRUSES IN GROUNDWATER RECHARGE SYSTEMS UTILIZING TERTIARY TREATED EFFLUENT
STARTING/ COMPLETION DATE : 09/76 - 11/79 : FY79
TASK CODE=D607B-022A **EPA=R804776-02 ** (GRANT)

EPA OFFICER.: EW AKIN — EPA/HERL - CINC — 513-684-7383
INVESTIGATOR.: JM VAUGHN — ASSOCIATED UNIV INC — DEPT OF APPLIED SCI
MILESTONES...: 07/78 -REPORT
01/79 -REPORT
10/79 -FINAL REPORT
PROGRAM ID...: (PE-607) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
ORDIS CODES..: RECN-001061 SSIE-GMA 3278 3 EPA -R804776-02 TASK-D607B-022A
ORD -RD10B30-4079 PE -607
PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: THE OBJECTIVE OF THE STUDY IS TO EVALUATE THE VIRUS AND BACTERIA-REMOVING CAPABILITIES OF A GROUNDWATER RECHARGE SYSTEM USING TERTIARY TREATED, CHLORINATED SEWAGE EFFLUENT IN ORDER TO DEFINE ITS ABILITY TO RETURN MICROBIOLOGICALLY ACCEPTABLE WATERS TO THE AQUIFER. OPERATIONS WILL INCLUDE: (A) ROUTINE WEEKLY ANALYSES OF SYSTEM INFLUENTS AND EFFLUENTS USING VIRUS CONCENTRATION METHODS FOLLOWED BY ENUMERATION AND IDENTIFICATION OF HUMAN VIRUS SP. (ENTEROVIRUSES), (B) STUDIES WITH KNOWN NUMBERS OF LABORATORY VIRUS STRAINS ADDED TO AND TRACED THROUGH THE SYSTEM, (C) STUDIES OF VIRUS SURVIVAL IN SOIL CORES TAKEN FROM RECHARGE SITE, (D) ROUTINE COLIFORM ANALYSES PERFORMED WITH SAME FREQUENCY AS ROUTINE VIRAL ANALYSES (A). RESULTS TO DATE: HUMAN ENTERIC VIRUSES HAVE BEEN ISOLATED FROM GROUND WATER 7.6 METERS BENEATH THE SURFACE AT A WASTEWATER RECHARGE SITE. STUDIES WITH SEEDED POLIOVIRUS INDICATED THAT UNDER SATURATION CONDITIONS, THE VIRUS CAN PENETRATE THE SANDY SOIL AND ENTER THE GROUND WATER WITHIN A FEW HOURS AFTER SURFACE APPLICATION. RECENT STUDIES HAVE SHOWN A FAIRLY WIDE RANGE OF SOIL ADSORPTION BY VIRUSES OF DIFFERENT STRAINS AND TYPES.

*PROJECT: 001183-IN VITRO ASSESSMENT OF MUTAGENIC/CARCINOGENIC POTENTIAL OF MIXTURES OF ORGANIC SUBSTANCES IN RENOVATED WASTEWATER
STARTING/ COMPLETION DATE : 01/77 - 12/79 : FY79
TASK CODE=D823B-007D **EPA=R804813-03 ** (GRANT)

EPA OFFICER.:	HR PAHREN	EPA/HERL - CINC
INVESTIGATOR.:	J SAXENA	SYRACUSE RESEARCH CORP
	D SCHWARTZ	SYRACUSE RESEARCH CORP
	V MANSOLINO	SYRACUSE RESEARCH CORP

MILESTONES...: 12/79 -FINAL REPORT
12/79 -DETERMINE MUTAGENICITY OF WASTE
PROGRAM ID...: (PE-823) HEALTH EFFECTS
FINAL OUTPUT.: DETERMINE MUTAGENICITY OF WASTE
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: SYNTHESIS OF MUTAGENS SUGGESTED. DETAILED INVESTIGATION OF ONE PLANT COMPLETED. TRANSFORMING ACTIVITY FOUND TO RESIDE IN BASIC STRONG ACID AND NEUTRAL FRACTIONS.

ORDIS CODES..:	RECN-001183	SSIE-GMA 3452 2	EPA -R804813-03	TASK-D823B-007D
	ORD -RD10B30-1079	LABN-D614B-064	MAND-10-01	
	PE -823		LABT-OHR	

PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: THE OBJECTIVE OF THE THREE YEAR STUDY IS TO ASSESS IN VITRO MUTAGENIC/CARCINOGENIC POTENTIAL OF ORGANIC SUBSTANCES IN RENOVATED WASTEWATERS AND ATTEMPT TO IDENTIFY THE FRACTIONS/CHEMICALS RESPONSIBLE FOR THE ACTION. WASTEWATER RENOVATION PLANTS REPRESENTING A WIDE VARIETY OF TREATMENT METHODS--NATURAL SAND BEDS, PHYSICAL-CHEMICAL, AND BIOLOGICAL, ARE SELECTED TO ENABLE CORRELATION OF THE DATA ON MUTAGENICITY/CARCINOGENICITY TO THE TREATMENT TECHNOLOGY. THE STUDY WILL PROVIDE INFORMATION ON HEALTH HAZARDS FROM RECLAIMED WASTEWATER FOR POTABLE USE AND ASSIST IN SETTING PRIORITIES FOR IN-DEPTH TOXICOLOGICAL TESTING. FIRST YEAR WAS DEVOTED TO ASSESSMENT OF THE MUTAGENIC/CARCINOGENIC POTENTIAL OF UNCONCENTRATED SECONDARY EFFLUENT, AND ADVANCED WASTER TREATMENT EFFLUENTS UTILIZING SALMONELLA AND YEAST MUTAGENESIS ASSAYS. SECONDARY EFFLUENT, AND LYSIMATER SAMPLES COLLECTED FROM DIFFERENT DEPTHS OF THE SAND BEDS AT LAKE GEORGE AWT PLANT SHOWED NO MUTAGENICITY. WASTEWATERS SPIKED WITH KNOWN MUTAGENS REVEALED THAT MUTAGENS CAN BE DETECTED IN WASTEWATERS WITHOUT SIGNIFICANT INTERFERENCE FROM THE COMPONENTS OF WASTEWATERS WITH THE BIOASSAY SYSTEM AND/OR WITH THE ACTIVITY OF MUTAGENS. SECONDARY AND AWT EFFLUENT SAMPLES COLLECTED FROM BAY PARK WATER RECLAMATION PLANT EXHIBITED WEAK MUTAGENICITY IN SALMONELLA STRAIN TA-1535. IN THE SECOND YEAR, CONCENTRATION OF ORGANICS FROM SECONDARY AND AWT EFFLUENTS AND ANALYSIS OF THE CONCENTRATES FOR MUTAGENICITY/CARCINOGENICITY USING IN VITRO BIOASSAY PROCEDURES WAS UNDERTAKEN. SINCE NO SINGLE CONCENTRATION DEVICE CAN BE USED TO REMOVE ALL ORGANICS OF CONCERN, A VARIETY OF CONCENTRATION TECHNIQUES--POLYURETHANE FOAM PLUGS, XAD-2, LIQUID-LIQUID EXTRACTION, AND THERMAL EXTRACTION FOR LOW-MOLECULAR WEIGHT VOLATILE ORGANICS--WAS USED. TO DETERMINE IF MUTAGENS/CARCINOGENS ARE PRESENT IN THE FORM OF CONJUGATES, CONCENTRATES WERE TESTED AFTER ACID AND ENZYME HYDROLYSIS. RESULTS TO DATE: NEARING COMPLETION OF THE SECOND YEAR. THE FOLLOWING RESULTS HAVE BEEN OBTAINED. THE PRESENCE OF MUTAGENS CAPABLE OF REVERTING BASE PAIR SUBSTITUTION MUTANT OF S. TYPHIMURIUM TA100 AND 1535 WAS DETECTED IN UNCONCENTRATED WASTEWATERS BOTH PRIOR TO AND AFTER AWT. AN INCREASE IN MUTAGENIC ACTITIVITY WAS NOTED AFTER LIMING AND/OR RECARBONATION STEP SUGGESTING SYNTHESIS OF MUTAGENS. DETAILED INVESTIGATION OF ONE PLANT HAS BEEN COMPLETED; THE C
(TEXT TRUNCATED -EXCEEDS CAPACITY)

*PROJECT: 000046-THE DEVELOPMENT AND APPLICATION OF AN OZONE VOLTAMMETRIC MEMBRANE ELECTRODE
STARTING/ COMPLETION DATE : 10/76 - 12/79 : FY79
TASK CODE=A824 -01 **EPA=R804834-03 ** (GRANT)

EPA OFFICER.: JF KOPP EPA/EMSL - CINC 513-684-7306
INVESTIGATOR.: KH MANCY UNIV OF MICHIGAN SCH OF PUB HLTH
MILESTONES...: 01/78 -DEVELOPMENT OF MANUAL ELECTRONIC SYSTEM
01/79 -DEVELOPMENT OF A STEADY STATE ELECTRODE SYSTEM
12/79 -DET. PERF. CHARACTERISTICS OF ELECTRODE SYSTEM AND FIELD TEST
PROGRAM ID...: (PE-824) DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 30-99 WATER SUPPLY
ORDIS CODES..: RECN-000046 SSIE-GMA 3608 2 EPA -R804834-03 TASK-A824 -01
ORD -RA10B30-3079 LABN-A614E-18 MAND-30-99
PE -824 LABT-MTS

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE PURPOSE OF THIS PROJECT IS THE DEVELOPMENT AND APPLICATION OF A MEMBRANE ELECTRODE SYSTEM CAPABLE OF IN-SITU MEASUREMENT OF DISSOLVED OZONE. APPROACH: BECAUSE OF THE UTILIZATION OF OZONE AS AN ALTERNATIVE TO CHLORINE IN WATER AND WASTEWATER TREATMENT PROCESSES, THERE IS NEED FOR SUCH A SENSOR SYSTEM. THROUGH A KNOWLEDGE OF ELECTRODE SYSTEMS, SUCH A SENSOR WILL BE DEVELOPED. TWO ELECTRODE SYSTEMS WERE DEVELOPED DURING THE FIRST YEAR OF THE GRANT. THE FIRST SYSTEM IS A MANUAL, HARDWIRED SYSTEM ALLOWING THE MEASUREMENT AND DISPLAY OF ELECTRODE CURRENT FOR A FIXED SET OF PULSE PARAMETERS. THE SECOND SYSTEM IS MICROCOMPUTER-CONTROLLED AND ALLOWS THE AUTOMATED MEASUREMENT OF ELECTRODE CURRENT OVER PRESPECIFIED RANGES IN PULSE PARAMETERS. THIS SECOND SYSTEM OVERCOMES MANY OF THE MANUAL SYSTEM'S LIMITATIONS AND EXTENDS ITS CAPABILITIES. THE DESIGN AND CONSTRUCTION OF AN OZONE MEMBRANE ELECTRODE CAPABLE OF POTENTIOSTATIC CONTROL HAS BEEN COMPLETED. THIS ELECTRODE HAS BEEN USED FOR STEADY STATE MEASUREMENT AS WELL AS THE INVESTIGATION OF PULSE TECHNIQUES.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

PROJECT NO. (Do not use this space)
SSIE
EPA R804847-02

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT: Environmental Information Transfer System

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. Robert C. Fite, Professor & Director, University Extension
Mr. Mark Gregory, Environmental Specialist

NAME AND ADDRESS OF APPLICANT INSTITUTION
Oklahoma State University
Stillwater, Oklahoma 74074

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Objectives:

(1) To share the results of a two-year demonstration project in Oklahoma "to develop and evaluate an environmental technology transfer system" with 10 EPA Regional offices and with Extension officials of at least one state in each EPA Region.

(2) To encourage the Cooperative Extension officials in other states to try the Oklahoma model.

(3) To explore the possibility of a National Environmental Education Program being developed which is based on well-prepared slide-tape packages being disseminated through the nation's Cooperative Extension network.

Approach:

While continuing the dissemination of environmental information through the Cooperative Extension Service in Oklahoma, the Director or his representative will visit each of the ten EPA Regional offices and plan a training seminar for a selected state in each EPA Region. A team of two people will then conduct a seminar for the benefit of the host state and encourage that state to try the Oklahoma model to disseminate environmental information to the people.

Progress and Future Plans:

The results from two years of experimentation confirm all hypotheses. Efforts will now be made to introduce to other states the Oklahoma model for disseminating environmental information through the Cooperative Extension Services. Evaluation of all phases of activity will continue to determine to what extent the Oklahoma model is adaptable in other states and other regions.

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*PROJECT: 004406-ULTRAVIOLET DISINFECTION OF A SECONDARY SEWAGE TREATMENT PLANT EFFLUENT

                   STARTING/ COMPLETION DATE : 08/77 - 08/79 :   FY79
                   TASK CODE=C822B-03TA12 **EPA=R804880     ** (GRANT)
 EPA  OFFICER.: AD VENOSA              EPA/MERL - CINC                      513-684-7668
 INVESTIGATOR.: OK SCHEIBLE            HYDROSCIENCE INC
 MILESTONES...: 08/77 -PROJECT START
                09/78 -INTERIM REPORT (SYMPOSIUM)
                01/79 -SUPPLEMENTAL FUNDS GRANTED
                04/79 -EXPERIMENTAL PHASE TERMINATED
 PROGRAM ID...: (PE-822 )          POINT SOURCE TECH DEV (WASTEWATER SYS)
 MANDATE......: 30-99     MICROBIOLOGY & CIVIL ENGINEERING
 CURR. RESULTS: UV LIGHT HAS DEFINITE ROLE TO PLAY IN WASTEWATER EFFLUENT
                DISINFECTION.  COLIFORM LEVELS LOW; LITTLE BY-PRODUCT
                FORMATION AND COSTS COMPETITIVE.
 ORDIS CODES..: RECN-004406          SSIE-GMA  5649        EPA -R804880         TASK-C822B-03TA12
                ORD -RC10830-3079    MAND-30-99            PE  -822
                                     LABT-EET

 PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH     DATA-ORIGINAL        UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
 ABSTRACT.....: OBJECTIVE: SUPPLEMENTAL FUNDING WAS GRANTED TO ENABLE PERFORMANCE EVALUATION OF THE FULL-SCALE
                 PROTOTYPE UV DISINFECTION UNIT THROUGH THE COLD WINTER SEASON, TO ALLOW ENDURANCE TESTS TO EXTEND
                 TO A TOTAL TIME FRAME OF 12 MONTHS, AND TO FURTHER THE INVESTIGATION OF PHOTOREACTIVATION.
                 APPROACH: THE UV SYSTEM WILL BE OPERATED CONTINUOUSLY 24 HOURS/DAY, 7 DAYS/WEEK. FLOW TO THE UV
                 UNIT WILL BE APPROXIMATELY 80 TO 90 PERCENT PLANT FLOW. CHLORINE WILL NOT BE ADDED TO THE UV
                 SEGMENT OF THE CONTACT TANK, TO ALLOW STUDYING PHOTOREACTIVATION IN SITU. THE SAME ANALYTICAL
                 SCHEDULE AS PREVIOUSLY PLANNED WILL BE FOLLOWED. RESULTS TO DATE: RESULTS HAVE BEEN MOST
                 ENCOURAGING. THE PROJECT HAS SO FAR CLEARLY DEMONSTRATED THAT UV LIGHT HAS A VERY DEFINITE ROLE TO
                 PLAY IN WASTEWATER EFFLUENT DISINFECTION. COLIFORM LEVELS HAVE BEEN CONSISTENTLY LOW; VERY LITTLE
                 BY-PRODUCT FORMATION HAS BEEN DETECTED; AND COSTS APPEAR COMPETITIVE WITH CHLORINE.
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U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R804885-03

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Writing Book on Toxicology of Pesticides

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Professor Wayland J. Hayes, Jr.
Department of Biochemistry

NAME AND ADDRESS OF APPLICANT INSTITUTION

Vanderbilt University
Nashville, TN 37232

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

This project is to write the second of two volumes on the toxicology of pesticides. The first of these volumes, published in 1975 by Williams and Wilkins, deals with the general principles of toxicology and with what might be called the epidemiology of pesticides poisoning in man and animals. The second volume will deal with groups of pesticides and with individual compounds within these groups. The two volumes were planned from the beginning as separate parts of a single unified work. This work may be viewed as an expansion of my Clinical Handbook on Economic Poisons. Although the Handbook enjoyed extensive use in this country and abroad, it contained almost nothing to orient the reader to general toxicology or to the overall picture of pesticide toxicity and storage. Hopefully, that need has been filled by my book, Toxicology of Pesticides, now published. It remains to present that part of subject to which nearly all of the Handbook was devoted. Attention will still be given almost entirely to compounds that have been studied in man, mainly in connection with occupational exposure or accidental or intentional poisoning, but surprisingly often in connection with planned experiments or therapeutic uses. Special attention will be given to clinically useful information including minimal dosages that have proved dangerous and maximal dosages that were tolerated. No attempt will be made to cover animal studies completely, but those that might contribute to an understanding of poisoning or to its treatment will be reported.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R 804900 01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

A NATIONAL STATISTICAL ASSESSMENT OF DOMESTIC RURAL WATER

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Joe D. Francis, Dept. of Rural Sociology, Cornell, Principle Investigator, Harold R. Capener, Dept. of Rural Sociology, Cornell, Co-Principle Investigator, David J. Allee, Agr. Econ., Cornell, Co-principle Investigator; M. Wayne Hall, Director, Water Resources Center, Univ. of Nebraska, Co-principal Invest.; William R. Jewell, Dept. Agr. Eng., Cornell, Advisor; Donald R. DeLuca, Dept. of Rural Sociology, Cornell, Research Assoc.

NAME AND ADDRESS OF APPLICANT INSTITUTION

Department of Rural Sociology, College of Agriculture & Life Sciences
Cornell University
Ithaca, New York 14853

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

In December 1974 the Safe Drinking Water Act was passed by Congress (P.L. 93-523). The Act required the Environmental Protection Agency to "conduct a survey of the drinking water situation in rural areas." Under a grant contract a research team based at Cornell University will develop a conceptual framework for implementing the national study. The survey will sample users (households) and suppliers. A multi-step, multi-stage stratified area probability sample will yield data descriptive of states, regions and a national profile of water quality, quantity, availability, dependability and affordability. The study is projected over a period of two years (1976-1978). Several R.F.P. contracts will be allocated by E.P.A. to provide data bases on discrete studies. The summary data will be turned over to the research design and analysis group at Cornell for inclusion in a final report. Collaborative working relationships will be maintained with the National Demonstration Water Project in Washington, D.C. and the Universities Council on Water Resources. The latter organization will exercise a review function on the final report prior to its submission to E.P.A.

*PROJECT: 002604-HIGH SENSITIVITY FT NMR STUDIES OF ENVIRONMENTAL TOXIC MATERIALS

STARTING/ COMPLETION DATE : 02/77 - 02/80 : FY78
TASK CODE=H615A-7531B **EPA=R804916 ** (GRANT)

EPA OFFICER.: NK WILSON EPA/HERL - RTP
INVESTIGATOR.: GC LEVY FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 03/77 -COMPLETE INSTRUMENT DESIGN
03/77 -INITIAL TESTS OF SUPERCONDUCTING SOLENOID
03/77 -INITIAL OPERATION FOR CARBON-13
06/77 -INITIAL OPERATION FOR NITROGEN-15
12/77 -INITIAL OPERATION FOR PHOSPHORUS-31
03/78 -COMPLETE STUDY MAGNETIC FIELD DEPENDENCE OF RELAXATION TIMES IN MISCELLES
02/79 -COMPLETE INITIAL EXPERIMENTS ON ORGANIC TOXIN-MODEL MEMBRANE SYSTEMS
02/80 -COMPLETE EXPERIMENTS ON ORGANIC TOXIN-SHORT SYNTHETIC DNA INTERACTIONS
PROGRAM ID...: (PE-615) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
MANDATE......: 10-06 FEDERAL INSECTICIDE, FUNG. AND RODENT. ACT
CURR. RESULTS: INITIAL EXPERIMENTS ON MODEL MEMBRANE SYSTEMS WITH TOXINS INITIATED. BROAD-BAND OPERATION OF SPECTROMETER SYSTEM ACHIEVED.

ORDIS CODES..:	RECN-002604	SSIE-GMA 4271 1	EPA -R804916	TASK-H615A-7531B
	ORD -RH10B30-1078	LABN-H615A-8531B	MAND-10-06	
	PE -615		LABT-OHR	

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT...... A NEW FT NMR SPECTROMETER SYSTEM OF UNPRECEDENTED SENSITIVITY FOR APPLICATIONS DEALING WITH BIOMOLECULAR STRUCTURE AND FUNCTIONS AND IS BEING DEVELOPED. THIS SYSTEM WILL BE USED FOR THE STUDY OF ENVIRONMENTAL TOXIC MATERIALS WITH EMPHASIS ON TOXIN-INDUCED CHANGES IN BIOMOLECULE STRUCTURE AND FUNCTION. EMPHASIS WILL BE ON THE INTERACTION OF ORGANIC TOXINS WITH MODEL MEMBRANE SYSTEMS AND SYNTHETIC SHORT NATIVE DNA. INITIAL EXPERIMENTS ON MODEL MEMBRANE SYSTEMS WITH ORGANIC TOXINS ARE BEING INITIATED. BROAD-BAND OPERATION OF THE SPECTROMETER SYSTEM HAS NOW BEEN ACHIEVED.

*PROJECT: 003635-ECOLOGICAL-BIOLOGICAL EFFECTS AND INTERACTIONS OF PESTICIDES IN A SOIL-PLANT-WATER MICROCOSM
STARTING/ COMPLETION DATE : 11/76 - 11/80 : FY79
TASK CODE=M714 -002 **EPA=R804920-02 ** (GRANT)

EPA OFFICER.: JD GILE — EPA/ERL - CORVALLIS — 503-757-4649
INVESTIGATOR.: EP LICHTENSTEIN — UNIV OF WISCONSIN — AGRIC & LIFE SCI/ENTOM DEPT
MILESTONES...: 10/79 -FINAL REPORT
PROGRAM ID...: (PE-714) ECOLOGICAL PROCESSES AND EFFECTS
MANDATE.......: 10-06 FEDERAL INSECTICIDE, FUNG. AND RODENT. ACT
ORDIS CODES..: RECN-003635 SSIE-GMA 5036 1 EPA -R804920-02 TASK-M714 -002
ORD -RM10B30-1079 LABN-M714F-207 MAND-10-06
PE -714 LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: TO DETERMINE THE POTENTIAL EFFECTS OF PESTICIDES USED FOR PLANT PROTECTION ON, AS WELL AS THEIR INTERACTION WITH OTHER PESTICIDAL OR ENVIRONMENTAL CHEMICALS IN BIOLOGICAL SYSTEMS. IN ACCOMPLISHING THE OBJECTIVE, DETERMINE THE FOLLOWING: 1) THE BIOLOGICAL EFFECTS AND INTERACTIONS OF PESTICIDES ON PLANTS GROWN IN SELECTED MICROCOSMS AS AFFECTED BY A NUMBER OF ENVIRONMENTAL CONDITIONS SUCH AS RAIN, TEMPERATURE, AIR HUMIDITIES, PLANT PATHOGENS, SOIL TYPES, AND THE PRESENCE OF RESIDWES OF DIFFERENT GROUPS OF PESTICIDES IN THE SOIL; 2) THE FATE OF A 14C-INSECTICIDE IN THE SOIL OF THE TERRESTRIAL PART OF THE MICROCOSM AS AFFECTED BY VARIOUS ENVIRONMENTAL CONDITIONS; 3) THE QUALITATIVE AND QUANTITATIVE COMPOSITION OF RUN-OFF WATER FROM THE SOIL; AND 4) THE EFFECT OF PESTICIDE CONTAMINATED RUN-OFF SOIL WATER ON BIOLOGICAL SYSTEMS IN WATER AS AFFECTED BY VARIOUS ENVIRONMENTAL CONDITIONS.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

EPA R804544-02

TITLE OF PROJECT

Uptake and Release of Hazardous Substances by Suspended Materials and Sediments in Lakes

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Philip C. Singer (P.I.), Charles R. O'Melia, and Mark S. Shuman, Professors and Associate Professor, respectively, all of the Department of Environmental Sciences and Engineering

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of North Carolina at Chapel Hill
Chapel Hill, NC 27514

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objectives of this project are: (a) to formulate equilibrium models for selected trace metals and hazardous organic materials in three representative areas of interest in the Great Lakes; (b) to evaluate past and present field sampling programs and to test the equilibrium models with available field data; (c) to identify any specific analytical and thermodynamic deficiencies which limit the applicability of the equilibrium models and to identify any major kinetic processes which negate the equilibrium approach and thus require further characterization; and (d) to perform appropriate analytical, thermodynamic, and kinetic experiments to meet the identified deficiencies and to provide a base for predictive modeling of hazardous substances and sediments in the Great Lakes.

The three representative regions will be (a) a polluted area such as Saginaw Bay, (b) an anoxic area such as the hypolimnion-sediment system in the Central Basin of lake Erie in the summer, and (c) a relatively unpolluted region such as the deep-water areas of Lake Michigan. Inputs and outputs will be considered and particular emphasis will be placed on sediment-water interactions. Hazardous substances to be considered include Cd, Zn, Cu, Pb, Ni, and selected polychlorinated biphenyls and polynuclear aromatics.

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*PROJECT: 000576-HIGH LEVEL OZONE DISINFECTION STUDY

                 STARTING/ COMPLETION DATE : 11/76 - 06/79 :   FY79
                 TASK CODE=C822B-03TA16 **EPA=R804946     ** (GRANT)
EPA  OFFICER.: EJ OPATKEN                EPA/MERL - CINC                   513-684-7643
INVESTIGATOR.: PA SHARON                 MARLBOROUGH CITY GOVT
               FC SAMPSON                                                  METCALF & EDDY ENGINEERS INC.
               E  STOVER                                                   METCALF & EDDY ENGINEERS INC.
PROGRAM ID...: (PE-822 )          POINT SOURCE TECH DEV (WASTEWATER SYS)
MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
               20-10     AA FOR WATER AND HAZARDOUS MATERIALS
               30-99     WASTEWATER TECHNOLOGY
CURR. RESULTS: PILOT PLANT FACILITIES OPERATIONAL.
ORDIS CODES..: RECN-000576          SSIE-GMA  5116 1     EPA -R804946       TASK-C822B-03TA16
               ORD -RC10B30-5079    LABN-C611B-0036      MAND-10-01
               MAND-20-10           MAND-30-99           PE  -822
               LABT-EET
PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH    DATA-UPDATED       UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: A CURRENT TREND IN COASTAL STATES IS TO IMPOSE STRINGENT DISINFECTION STANDARDS ON TREATED WASTEWATER FOR THE PROTECTION OF SHELLFISH AREAS. SEVERAL STATES HAVE ALSO IMPOSED VERY STRINGENT DISINFECTION REQUIREMENTS TO PROTECT INLAND WATERS THAT ARE UTILIZED FOR WATER RECREATION. OZONE HAS SURFACED AS THE MOST PROMISING ALTERNATIVE DISINFECTANT TO CHLORINATION; HOWEVER, RESEARCH TO DATE HAS FOCUSED ON ACHIEVING DISINFECTION STANDARDS WELL ABOVE THOSE PROPOSED/IMPOSED FOR SPECIFIC RECEIVING STREAMS. THIS PROJECT WILL BE CAPABLE OF OZONATING A SIDE STREAM FROM A CONVENTIONAL ACTIVATED SLUDGE TREATMENT FACILITY TO DETERMINE OZONE REQUIREMENTS FOR ACHIEVING HIGH LEVELS OF DISINFECTION. FACILITIES ARE ALSO AVAILABLE FOR EVALUATING OZONE REQUIREMENTS ON A TERTIARY TREATED EFFLUENT. THE RESEARCH PLAN WILL EVALUATE THE EFFECT OF DIURNAL VARIATION OF RAW WATER ON PERFORMANCE AND DISINFECTION RELIABILITY. GOALS ON DISINFECTION ARE TOTAL COLIFORMS BELOW 230, 70 AND 3 PER 100 ML. RESULTS TO DATE: THE PILOT PLANT FACILITIES ARE OPERATIONAL. THE DATA INDICATES THAT 12 MG O3/L IS REQUIRED TO DISINFECT NITRIFIED EFFLUENT BELOW 3 TC/100 ML. THE UTILIZED DOSE INCREASES TO 15 MG O3/L TO DISINFECT FILTERED SECONDARY EFFLUENT BELOW 3 TC/100 ML.

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*PROJECT: 003031-COMPREHENSIVE PACKAGE FOR SIMULATION OF WATERSHED HYDROLOGY AND WATER
               QUALITY
                    STARTING/ COMPLETION DATE : 10/76 - 10/78 :   FY79
                    TASK CODE=K609A-402    **EPA=R804971    ** (GRANT)
  EPA  OFFICER.: TO BARNWELL              EPA/ERL - ATHENS                  404-546-3175
  INVESTIGATOR.: DD FRANZ                                                   HYDROCOMP INC.
                 JJ HELER                                                   HYDROCOMP INC.
                 RC JOHANSON                                                HYDROCOMP INC.
                 KM LEYTHAM                                                 HYDROCOMP INC.
                 AS DONIGIAN                                                HYDROCOMP INC.
                 DC BEYERLEIN                                               HYDROCOMP INC.
  MILESTONES...: 12/77 -INTERIM REPORT
                 10/78 -FINAL REPORT ON SIMULATION MODEL
  PROGRAM ID...: (PE-609 )          HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE OF POLLUTANTS
  FINAL OUTPUT.: COMPUTER PROGRAM AND USERS GUIDE
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
                 10-06     FEDERAL INSECTICIDE, FUNG. AND RODENT. ACT
  CURR. RESULTS: SIMULATION SYSTEM COMPLETED, BUT NOT TESTED.
  ORDIS CODES..: RECN-003031        SSIE-GMA  4143 2      EPA -R804971        TASK-K609A-402
                 ORD -RK10B30-1079  MAND-10-01            MAND-10-06
                 PE  -609                                 LABT-EPE

  PROJ STATUS..: PROJECT-COMPLETED     CATEGORY-RESEARCH     DATA-UPDATED        UPDATED-  JUL-SEP 79
                                       ACCESS-PUBLIC
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ABSTRACT.....: THE OBJECTIVE OF THIS STUDY IS TO DEVELOP A COMPREHENSIVE BASIN WATERSHED HYDROLOGY AND WATER QUALITY MODEL. SUBMODELS OF WATERSHED, RESERVOIR, AND RIVER DYNAMICS WILL BE LINKED INTO A COMPREHENSIVE MODEL. THE MODEL WILL ROUTE WATER, WATER TEMPERATURE, DISSOLVED OXYGEN, BIOCHEMICAL OXYGEN DEMAND, NITROGEN, PHOSPHORUS, COLIFORM BACTERIA, CHLOROPHYLL A, ZOOPLANKTON, BENTHIC ALGAE, DISSOLVED SOLIDS, AND CONSERVATIVE CONSTITUENTS. DIFFERENT LOADING MODULES WILL BE AVAILABLE FOR USER SELECTION. THE MODEL WILL BE STRUCTURED IN A MODULAR FORMAT TO FACILITATE THE FUTURE INTRODUCTION OF ALTERNATE SUBMODELS. A DOCUMENTED COMPUTER PROGRAM AND USER'S GUIDE DESCRIBING THE OPERATION OF THE COMPREHENSIVE MODEL WILL BE PUBLISHED. RESULTS TO DATE: THE SIMULATION SYSTEM HAS BEEN COMPLETED BUT NOT TESTED. THE SYSTEM WILL BE THOROUGHLY TESTED IN ANOTHER PROJECT, TASK K609A-474.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

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Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R804974-02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Effects of Post-Implantation Exposure to Pesticides on Reproduction

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. Fitzgerald Spencer - Biology
Associate Professor
Southern University

NAME AND ADDRESS OF APPLICANT INSTITUTION

Southern University
Southern Branch P. O., Baton Rouge, La. 70813

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

1. Objective: a) To investigate the potential of selected pesticides to affect certain aspects of reproductive physiology following post-implantation exposure in female rats. b) To study the effects of the pesticides on physiological parameters which pertain to the pre-and post-natal development of fetal organisms.
2. Approach: Standard and basic physiological procedures will be used in accomplishing the study.
3. Progress: Primary emphasis so far has been placed on preparation of laboratory and animal quarters, purchasing of equipment and supplies, and on training graduate student in the basic techniques of experimentation with rats. (Vaginal cytology, induction of pseudopregnancy, stimulation of decidual cell reaction - uterine traumatization).

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*PROJECT: 002442-SERIAL MEASUREMENT OF PULMONARY FUNCTION IN PANELS OF ASTHMATICS AND
           OCCUPATIONAL GROUPS IN THE ST. LOUIS METROPOLITAN AREA
              STARTING/ COMPLETION DATE : 12/76 - 12/77 :   FY77
              TASK CODE=H601D-7348   **EPA=R805006    ** (GRANT)
 EPA OFFICER.: DC CALAFIORE          EPA/HERL - RTP
 INVESTIGATOR.: RG SLAVIN            ST. LOUIS UNIV                  SCH OF MEDICINE
                RH SECKERWALKER      ST. LOUIS UNIV                  SCH OF MEDICINE
 MILESTONES...: 12/76 -GRANT AWARD
                12/77 -FINAL REPORT
 PROGRAM ID...: (PE-601 )        HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
 ORDIS CODES..: RECN-002442        SSIE-GMA 2858 2     EPA -R805006      TASK-H601D-7348
                PE  -601                               LABT-OHR
 PROJ STATUS..: PROJECT-COMPLETED  CATEGORY-RESEARCH   DATA-ORIGINAL     UPDATED-  OCT-DEC 76
                                   ACCESS-PUBLIC
 ABSTRACT.....: THE PURPOSE OF THIS STUDY IS TO MEASURE PULMONARY FUNCTION ON A DAILY BASIS OVER A TWO-WEEK PERIOD
                  IN PANELS OF ASTHMATICS AND HEALTHY OUTDOOR WORKERS IN THE ST. LOUIS METROPOLITAN AREA. THE
                  MEASUREMENTS WILL BE CORRELATED WITH CHANGES IN AIR POLLUTION LEVELS. THE ASTHMATIC PANELS WILL BE
                  COMPOSED OF EXTRINSIC AND INTRINSIC ASTHMATICS WHO RESIDE IN EITHER THE INNER CITY OR IN SUBURBAN
                  ST. LOUIS. HEALTHY OUTDOOR WORKERS WILL BE SMOKING OR NONSMOKING WORKERS IN THE INNER CITY OR
                  SUBURBAN ST. LOUIS.

*PROJECT: 005154-PERFORMANCE OF ALTERNATE COATINGS IN THE ENVIRONMENT (PACE)

              STARTING/ COMPLETION DATE : 02/77 - UNK   :   FY79
              TASK CODE=B604B-460    **EPA=R805027    ** (GRANT)
 EPA OFFICER.: C  DARVIN              EPA/IERL - CINC                 513-684-4491
 INVESTIGATOR.: JD KEANES                                             STEEL STRUCTURES PAINTING COUNCIL
 MILESTONES...: 08/78 -DRAFT REPORT RECEIVED
 PROGRAM ID...: (PE-604 )         MINERALS PROC. AND MANUFACTURING INDUSTRIES
 FINAL OUTPUT.: DRAFT REPORT RECEIVED
 MANDATE......: 10-09      REORGANIZATION PLAN # 3
                10-03      TOXIC SUBSTANCES CONTROL ACT
                10-05      RESOURCE CONSERVATION AND RECOVERY ACT
                10-07      NOISE CONTROL ACT OF 1972
 CURR. RESULTS: PROMISING COATINGS IDENTIFIED.
 ORDIS CODES..: RECN-005154        SSIE-GMA 6188       EPA -R805027      TASK-B604B-460
                ORD -RB10B30-1079  MAND-10-09          MAND-10-03
                MAND-10-05         MAND-10-07          PE  -604
                LABT-EET
 PROJ STATUS..: PROJECT-ACTIVE     CATEGORY-RESEARCH   DATA-ORIGINAL     UPDATED-  OCT-DEC 79
                                   ACCESS-PUBLIC
 ABSTRACT.....: OBJECTIVE: TO SCREEN NEW COATING SYSTEMS AND IDENTIFY THOSE SYSTEMS WHICH HAVE LEAST ENVIRONMENTAL
                  IMPACT AND CAN COMPLY WITH PRESENT AND PENDING ENVIRONMENTAL REGULATIONS. APPROACH: SCREEN BY
                  LABORATORY AND FIELD TEST NEW COATING SYSTEMS.
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*PROJECT: 003343-RADIUS OF INFLUENCE OF SUBSURFACE INJECTION WELLS

STARTING/ COMPLETION DATE : 02/77 - 01/80 : FY79
TASK CODE=L824C-12 **EPA=R805039 ** (GRANT)

EPA OFFICER.: JW KEELEY EPA/ERL - ADA 405-332-8800 E
INVESTIGATOR.: DL WARNER UNIV OF MISSOURI SCH OF ENG
MILESTONES...: 02/79 -FINAL REPORT (INITIAL PROJECT): "RADIUS OF PRESSURE INFLUENCE OF INJECTION WELLS"
01/80 -GRAPHIC DISPLAY: RADIUS OF INFLUENCE EQUATIONS
PROGRAM ID...: (PE-824) DRINK WATER TREATMENT & GROUND WATER PROT
FINAL OUTPUT.: FINAL REPORT (INITIAL PROJECT): "RADIUS OF PRESSURE INFLUENCE OF INJECTION WELLS"
GRAPHIC DISPLAY: RADIUS OF INFLUENCE EQUATIONS
MANDATE......: 10-15 SAFE DRINKING WATER ACT
CURR. RESULTS: THE FINAL REPORT OF THE INITIAL PROJECT HAS BEEN RECEIVED AND IS UNDER FINAL REVIEW PRIOR TO PRINTING. THE PROJECT WAS AMENDED IN FEBRUARY 1979 TO ALLOW FOR THE DEVELOPMENT OF A GRAPHIC DISPLAY PROGRAM OF EVALUATED EQUATIONS.

ORDIS CODES..: RECN-003343	SSIE-GMA 5306 1	EPA -R805039	TASK-L824C-12
ORD -RL10B30-1079	LABN-L614C-012	MAND-10-15	
PE -824		LABT-EPE	

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVES: THE PROJECT IS DESIGNED TO PROVIDE A GUIDANCE DOCUMENT FOR THE UNDERGROUND INJECTION CONTROL REGULATIONS BEING DEVELOPED BY THE OFFICE OF DRINKING WATER. APPROACH: METHODS CURRENTLY BEING USED TO CALCULATE PRESSURE INCREASES AROUND AN INJECTION WELL HAVE BEEN EVALUATED. IN ADDITION, SOME 34 OF THESE EQUATIONS HAVE BEEN PROGRAMMED ON PLASTIC MODULES FOR USE IN THE TEXAS INSTRUMENTS MODEL 59 PROGRAMMABLE ELECTRONIC CALCULATOR. THESE CAN BE MADE AVAILABLE TO THE OFFICE OF WATER SUPPLY OR ANY OTHERS HAVING A NEED. PROGRESS: THE PROJECT WILL BE EXTENDED TO DEVELOP A DIGITAL COMPUTER MODEL TO CALCULATE PRESSURE INCREASES AROUND ONE WELL OR GROUPS OF WELLS ACTING SYNERGISTICALLY. THIS WILL BE LINKED TO A COMPUTER GRAPHICS PROGRAM SO THAT DATA POINTS GENERATED BY THE DIGITAL MODEL CAN BE AUTOMATICALLY CONTOURED OR CROSS-SECTIONED. THIS SYSTEM WILL ALSO BE MADE AVAILABLE TO THOSE WHO CAN AFFORD THE COST. RESULTS TO DATE: THE FINAL REPORT OF THE INITIAL PROJECT HAS BEEN RECEIVED AND IS UNDER FINAL REVIEW PRIOR TO PRINTING. THE PROJECT WAS AMENDED IN FEBRUARY 1979 TO ALLOW FOR THE DEVELOPMENT OF A GRAPHIC DISPLAY PROGRAM OF EVALUATED EQUATIONS.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO.*(Do not use this space)*

SSIE

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

EPA R805067-02

TITLE OF PROJECT

International Environmental Programs Committee

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Raphael Kasper, Environmental Studies Board

NAME AND ADDRESS OF APPLICANT INSTITUTION

National Academy of Sciences
2101 Constitution Ave.
Washington, D.C. 20418

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

IEPC serves as the U.S. National Committee for the Scientific Committee on Problems of the Environment (SCOPE) of the International Council of Scientific Unions (ICSU). The purpose of SCOPE is to advance knowledge about the influence of human activities on the environment and to serve as a non-governmental source of advice on environmental problems.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R805091-03

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Effect of SO_2 and Sulfates on Respiratory Defense Mechanisms

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Joseph D. Brain, Department of Physiology, Associate Professor of Physiology
John J. Godleski, Department of Pathology, Harvard Medical School
Rudolph J. Jaeger, Department of Physiology, Assistant Professor of Physiology
Sergei P. Sorokin, Department of Physiology, Associate Professor of Cell Biology
William Skornik, Department of Physiology, Research Assistant II

NAME AND ADDRESS OF APPLICANT INSTITUTION

Harvard University School of Public Health
677 Huntington Avenue
Boston, Massachusetts 02115

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The overall objective of this research program is to evaluate the alveolar macrophage response in several species of animals consequent to the inhalation of standardized sulfate particulates, sulfuric acid, and sulfur dioxide (with and without ferric oxide particles). The optimum concentration of particles, particle size, and time of sacrifice of the test animals are being determined in preliminary studies. A number of measurements of the response of free cells to these particulates will be made, such as the total number of size of free cells available, viability of free cells, phagocytic capability, and other physiological and biochemical responses.

During the second year of this grant, experiments were completed which focused on changes in respiratory defense mechanisms caused by combined exposure of hamsters to 50 ppm SO_2 and 10 mg/m^3 of Fe_2O_3. Significant reductions in macrophage endocytosis of colloidal gold were observed. The changes were greater when the particle size of the iron was smaller. Similar depressions in macrophage function have been observed in hamsters exposed to 5 to 25 mg/m^3 of zinc ammonium sulfate. Finally, the rate of particle ingestion by pulmonary macrophages in vivo was measured during exercise with and without concomitant SO_2 exposure. After 40 minutes of continuous exercise (running on a treadmill at 0.9 km/hr), the percent of particles which had been ingested after one hour decreased from 64% (exercise only) to 41% (exercise + SO_2). Future work will continue to investigate the importance of exercise as a risk factor and will rank various sulfates in regard to their ability to depress phagocytosis.

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*PROJECT: 004599-TECHNICAL AWARENESS IN THE NONFERROUS METALS INDUSTRY - PILOT STUDY
                 (TANMIPS)
                      STARTING/ COMPLETION DATE : 02/77 - 02/81 :    FY79
                      TASK CODE=B604C-560    **EPA=R805095-01  ** (GRANT)
  EPA  OFFICER.: AB CRAIG                   EPA/IERL - CINC
  INVESTIGATOR.: ES BARTLETT                BATTELLE MEMORIAL INST
                 RH CHERRY                  BATTELLE MEMORIAL INST
  MILESTONES...: 02/81 -FINAL REPORT RECEIVED
  PROGRAM ID...: (PE-604 )               MINERALS PROC. AND MANUFACTURING INDUSTRIES
  FINAL OUTPUT.: SIX BIMONTHLY AWARENESS BULLETINS TO BE GIVEN LIMITED
                 DISTRIBUTION WITHIN IERL-CINN.
  MANDATE......: 20-62      DAA FOR ENVIRONMENTAL ENGIN. AND TECHNOLOGY
  CURR. RESULTS: BIMONTHLY BULLETINS HAVE BEEN PRINTED SINCE OCTOBER
                 1977.  A SUMMARY OF THE FIRST YEAR'S BULLETINS HAS
                 ALSO BEEN PREPARED FOR GENERAL PUBLIC CONSUMPTION.
  ORDIS CODES..: RECN-004599        SSIE-GMA  5947       EPA -R805095-01       TASK-B604C-560
                 ORD -RB10B30-2079  MAND-20-62           PE  -604
                                    LABT-EET

  PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH    DATA-UPDATED          UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS PROJECT IS TO PROVIDE A CONTINUING SURVEY OF THE TECHNICAL LITERATURE ON ENVIRONMENTAL AND ENERGY ISSUES RELATED TO THE NONFERROUS INDUSTRY AND TO CONDUCT ENGINEERING EVALUATION OF PROCESSES WHICH MIGHT MERIT EVALUATION BY THE METAL AND ORGANICS CHEMICALS BRANCH, OFFICE OF RESEARCH AND DEVELOPMENT, EPA. APPROACH: TWO HUNDRED PERIODICAL JOURNALS ARE REVIEWED ON A MONTHLY BASIS AND ITEMS PERTINENT TO THE SUBJECT ARE REMOVED, ABSTRACTED, AND SUBJECTED TO ENGINEERING ANALYSIS. THE RELEVANT ITEMS ARE REPORTED BIMONTHLY IN THE TECHNICAL AWARENESS BULLETIN. THE SECTIONS THAT RELATE THIS INFORMATION CONSIST OF: "HIGHLIGHTS", "IN THE NEWS", "RECENT PATENTS", AND AN INDEXED "TECHNOLOGY AND TRENDS" SECTION. RESULTS TO DATE: BIMONTHLY BULLETINS HAVE BEEN PRINTED SINCE OCTOBER 1977. A SUMMARY OF THE FIRST YEAR'S BULLETINS HAS ALSO BEEN PREPARED FOR GENERAL PUBLIC CONSUMPTION.

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*PROJECT: 000657-SURVEY OF WASTE SLUDGES FOR PARASITIC CONTAMINATION IN THE U.S. &
                 INVESTIGATION OF WASTE TREATMENT TO INHIBIT CONTAMINATION (A
                      STARTING/ COMPLETION DATE : 03/77 - 11/79 :    FY79
                      TASK CODE=C821B-01TA43 **EPA=R805107-01  ** (GRANT)
  EPA  OFFICER.: G  TERN                  EPA/MERL - CINC                 513-684-7654
  INVESTIGATOR.: RS REIMERS               TULANE UNIV OF LOUISIANA        SCH PUB HLTH/TROP MED
                 MD LITTLE                TULANE UNIV OF LOUISIANA        SCH PUB HLTH/TROP MED
  MILESTONES...: 05/77 -PROJECT STARTED
                 05/79 -PROJECT COMPLETED
                 11/79 -INVESTIGATION OF WASTE SLUDGES FOR PARASITIC CONTAMINATION
  PROGRAM ID...: (PE-821 )          URBAN SYSTEMS & TOXICS RESIDUAL MANAGEMENT
  FINAL OUTPUT.: INVESTIGATION OF WASTE SLUDGES FOR PARASITIC
                 CONTAMINATION IN U.S.
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
                 10-05     RESOURCE CONSERVATION AND RECOVERY ACT
  CURR. RESULTS: MOST EFFECTIVE MEANS TO INACTIVATE PARASITES IN SEWAGE
                 SLUDGES ARE BY INCREASING ANAEROBIC AND AEROBIC SLUDGE
                 TREATMENT TEMPERATURES.
  ORDIS CODES..: RECN-000657          SSIE-GMA  3963 2      EPA -R805107-01       TASK-C821B-01TA43
                 ORD -RC10B31-1079    LABN-C611B-7072       MAND-10-01
                 MAND-10-05           PE   -821                                   LABT-EET

  PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
  COMMENT......: FY=79,RC=C,AH=RD,PE=821,$00006000
                 FY=79,RC=C,AH=RD,PE=607,$00006000
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ABSTRACT.....: OBJECTIVE: THIS STUDY IS TO INVESTIGATE MUNICIPAL WASTE SLUDGES FROM THE SOUTHEASTERN STATES FOR POSSIBLE PARASITIC CONTAMINATION. PART OF THE STUDY OBJECTIVE IS TO INVESTIGATE SELECT SLUDGE TREATMENTS (E.G., LIME, AEROBIC AND ANAEROBIC SLUDGE AND OTHER TREATMENTS) TO INACTIVATE PARASITES IN THE SEWAGE SLUDGES. APPROACH: SAMPLE AND MEASURE SEWAGE SLUDGES BEFORE SLUDGE TREATMENTS AND PRIOR TO SLUDGE DISPOSALS FOR PARASITIC CONTENTS. INVESTIGATE ON A LABORATORY SCALE SLUDGE TREATMENTS TO INACTIVATE PARASITES IN THE SEWAGE SLUDGES. CONDUCT PARASITE MASS BALANCES AT A MUNICIPAL WASTEWATER TREATMENT PLANT. RESULTS TO DATE: SEASONAL INVESTIGATIONS HAVE SHOWN THAT SEVERAL TYPES OF PARASITES, INCLUDING ASCARIS LUMBRICOIDES ARE PREVALENT IN SEWAGE SLUDGES IN THE SOUTHEASTERN U.S. OF THE SLUDGE TREATMENT METHODS TESTED, THE MOST EFFECTIVE MEANS TO INACTIVATE PARASITES IN SEWAGE SLUDGES ARE BY INCREASING ANAEROBIC AND AEROBIC SLUDGE TREATMENT TEMPERATURES. HIGH PH EFFECTIVENESS WITH LIME CAN BE IMPROVED BY FIRST ENCOURAGING EMBRYONATION OF THE PARASITES. PARASITES FROM STOOLS ARE MORE RESISTANT TO SLUDGE TREATMENTS THAN PARASITIC EGGS TAKEN FROM THE UTERUS OF WORMS.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved OMB No. 158-R0081

PROJECT NO.*(Do not use this space)*

SSIE

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

EPA R805146-03

TITLE OF PROJECT

"Heavy Metal Accumulation in Benthic Algal Communities"

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Linda Sicko-Goad, Assistant Research Scientist, Great Lakes Research Division

Eugene F. Stoermer, Research Scientist, Great Lakes Research Division

NAME AND ADDRESS OF APPLICANT INSTITUTION

The University of Michigan
Ann Arbor, Michigan 48109

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The research proposed is a continuation of methodology previously described to assess, at the cellular level, quantitative changes in algae resulting from heavy metal exposure. Work to date has indicated that lead is commonly found in algae occurring in natural assemblages and lead uptake and accumulation occurs mainly in vacuole areas of the cell in laboratory heavy-metal loading experiments. Copper has not been found to accumulate in cells, although at low levels (5 ppb) it apparently affetc the phosphate-uptake mechanism. Cadmium has not yet been detected in algae collected from stress areas of the Great Lakes, nor have we been able to detect any accumulations in laboratory loading and/or uptake experiments. Further work will be conducted on long-term exposure to heavy metals in an attempt to determine cellular accumulations and/or subtle cellular changes as can be detected by quantitative electron microscopy (morphometry) and x-ray analysis.

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*PROJECT: 003039-DEVELOPMENT OF DYNAMIC TWO-LAYER MODEL FOR STRATIFIED ESTUARIES

                 STARTING/ COMPLETION DATE : 12/76 - 10/79 :   FY79
                 TASK CODE=K609A-406    **EPA=R805170-01  ** (GRANT)
EPA  OFFICER.: RB AMBROSE             EPA/ERL - ATHENS               404-546-3546
INVESTIGATOR.: WP WALSH               RAYTHEON CO                    RAYTHEON OCEANOGRAPH & ENV SVC
               CV BECKERS             RAYTHEON CO                    RAYTHEON OCEANOGRAPH & ENV SVC
               W  COMERY              RAYTHEON CO                    RAYTHEON OCEANOGRAPH & ENV SVC
MILESTONES...: 07/78 -INTERIM REPORT PHASE I, HYDRODYNAMICS
               01/79 -COMPLETE PHASE II, WATER QUALITY
               06/79 -COMPLETE PHASE III, MODEL LINKAGE
               08/79 -DRAFT FINAL REPORT, USER MANUAL
               10/79 -COMPUTER PROGRAM, USER MANUAL
PROGRAM ID...: (PE-609 )          HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE OF POLLUTANTS
FINAL OUTPUT.: COMPUTER PROGRAM, USER MANUAL
MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: INTERIM REPORT SUBMITTED JULY 78.  FINAL REPORT
               TO BE SUBMITTED AT END OF PROJECT.
ORDIS CODES..: RECN-003039       SSIE-GMA  3994 2      EPA -R805170-01      TASK-K609A-406
               ORD -RK10B30-1079 MAND-10-01            PE  -609
                                 LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH    DATA-UPDATED         UPDATED-  JUL-SEP 79
                                  ACCESS-PUBLIC
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ABSTRACT.....: THE PRIMARY OBJECTIVE OF THE PROJECT IS TO DEVELOP A TWO-LAYER DYNAMIC MODEL OF ESTUARINE HYDRODYNAMICS AND WATER QUALITY. THE MODEL IS TO BE COMPATIBLE FOR LINKAGE WITH APPROPRIATE RIVER AND LOADING MODELS TO PROVIDE A BASIN PLANNING METHODOLOGY IN COASTAL AREAS. A SECOND OBJECTIVE IS TO TEST THE ESTUARY MODEL ON A FIELD DATA SET TO DEFINE ITS PERFORMANCE CHARACTERISTICS. APPROACH: THE APPROACH IS TO COMPLETE THE DEVELOPMENT OF THE RAMSES HYDRODYNAMIC MODEL AND LINK IT TO THE RECEIV-III WATER QUALITY MODEL. IN THE FIRST PHASE OF THIS STUDY, THE HYDRODYNAMIC CODE WILL BE TESTED, AND ITS SENSITIVITY TO MODE PARAMETERS DETERMINED. IN THE SECOND PHASE, THE WATER QUALITY MODEL WILL BE EXTENDED TO TWO-LAYERS AND TESTED. IN THE THIRD PHASE, THE HYDRODYNAMIC AND WATER QUALITY MODELS WILL BE LINKED. RESULTS TO DATE: AN INTERIM REPORT WAS SUBMITTED IN JULY 1978 WHICH INCLUDED DISCUSSION OF THE HYDRODYNAMIC MODEL DEVELOPMENT. A FINAL REPORT WILL BE SUBMITTED AT THE END OF THE PROJECT, PRESENTING THE HYDRODYNAMIC AND WATER QUALITY MODEL DEVELOPMENT, LINKAGE, AND TESTING. A USERS MANUAL WILL BE PROVIDED.

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*PROJECT: 000637-DEMONSTRATION PROGRAM TO SHOW LANDOWNERS AND MUNICIPALITIES ACCEPTABLE
            SYSTEMS FOR APPLYING SLUDGE ON LAND
               STARTING/ COMPLETION DATE : 08/77 - 02/81 :   FY79
               TASK CODE=C821B-01TC35 **EPA=S805189-01  ** (GRANT)
  EPA  OFFICER.: GK DOTSON              EPA/MERL - CINC                 513-684-7661
  INVESTIGATOR.: JK HILL                FARM BUR DEV CORP
                 VV HAMPARIAN           OHIO STATE UNIV                 COLL OF MED
                 CR DORN                OHIO STATE UNIV                 COLL OF MED
  PROGRAM ID...: (PE-821 )          URBAN SYSTEMS & TOXICS RESIDUAL MANAGEMENT
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
                 10-04     PUBLIC HEALTH SERVICES ACT
                 10-05     RESOURCE CONSERVATION AND RECOVERY ACT
                 20-12     DAA FOR WATER PROGRAM OPERATIONS
                 20-14     DAA FOR SOLID WASTE
  ORDIS CODES..: RECN-000637       SSIE-GMA  3975 2      EPA -S805189-01      TASK-C821B-01TC35
                 ORD -RC10830-5079 LABN-C611B-7061       MAND-10-01
                 MAND-10-04        MAND-10-05            MAND-20-12           MAND-20-14
                 PE  -821                                LABT-EET
  PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH     DATA-UPDATED         UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE OBJECTIVE IS TO DEMONSTRATE SAFE, BENEFICIAL USE OF WASTEWATER SLUDGE AS A SOIL AMENDMENT ON AGRICULTURAL LAND. INSTITUTIONAL ARRANGEMENTS TO PERMIT OBJECTIVE EVALUATIONS AND DECISIONS BY BOTH RURAL AND URBAN RESIDENTS WILL BE DEMONSTRATED. THE EFFECT OF PROPER APPLICATION AND MANAGEMENT OF A LAND APPLICATION OF SLUDGE ON PUBLIC HEALTH AND THE ENVIRONMENT WILL BE DETERMINED. APPROACH: FOUR COMMUNITIES IN OHIO THAT ALREADY DISPOSE OF SLUDGE BY SPREADING IT ON FARM LAND WILL SUPPLY SLUDGE FOR APPLICATION TO SELECTED FARMS IN A CAREFULLY PLANNED AND MANAGED SYSTEM. IN ADDITION TO SLUDGE APPLICATION ON FIELDS, SLUDGE WILL BE APPLIED TO CAREFULLY SELECTED PLOTS FOR MEASUREMENT OF ITS EFFECT ON YIELD AND COMPOSITION OF CROP, COMPOSITION OF SOIL, AND CONSUMPTION OF GROUND AND SURFACE WATER. AN EPIDEMIOLOGICAL STUDY OF LIVESTOCK AND PEOPLE WHO COME IN CONTACT WITH SLUDGES WILL MEASURE THE HEALTH EFFECTS OF SLUDGE SPREADING.

*PROJECT: 001009-DEMONSTRATION PROGRAM TO SHOW OHIO LANDOWNERS AND MUNICIPALITIES ACCEPTABLE SYSTEMS FOR APPLYING SLUDGE ON LAND
STARTING/ COMPLETION DATE : 07/77 - 06/80 : FY79
TASK CODE=D607A-003B **EPA=S805189-01 ** (GRANT)

EPA OFFICER.: NE KOWAL — EPA/HERL - CINC — 513-684-7217
INVESTIGATOR.: VV HAMPARIAN — OHIO STATE UNIV — COLL OF MED
R DORN — OHIO STATE UNIV — COLL OF MED
MILESTONES...: 07/77 -PROJECT INITIATED
03/78 -FIRST LAND APPLICATION
PROGRAM ID...: (PE-607) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
MANDATE......: 10-15 SAFE DRINKING WATER ACT
ORDIS CODES..: RECN-001009 — SSIE-GMA 5384 1 — EPA -S805189-01 — TASK-D607A-003B
ORD -RD10B30-1079 — MAND-10-15 — PE -607
LABT-OHR

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: HEALTH EFFECTS IN HUMANS AND ANIMALS RESULTING FROM THE APPLICATION OF MUNICIPAL SEWAGE SLUDGE TO FARMS IN OHIO WILL BE EVALUATED. SUBJECTS COVERED INCLUDE: (1) MONITORING OF PATHOGENS IN STOOLS, SLUDGE, AND SOIL. (2) MONITORING FARM FAMILY HEALTH STATUS AND SEROLOGY. (3) RELATING SLUDGE VIRUS TO VIRAL INFECTIONS. (4) INVESTIGATING VIABILITY OF SOIL PATHOGENS. (5) MONITORING HEALTH STATUS OF FARM ANIMALS. (6) MONITOR TRACE ELEMENT ACCUMULATION OF CATTLE. (7) MEASURE PARASITE SURVIVAL AND INFECTION RATE OF CATTLE. (8) MONITOR ANIMALS FOR TUBERCULOSIS AND SALMONELLA INFECTION. 9. MONITOR CADMIUM CONTENT IN STOOLS AND RELATE TO CADMIUM INTAKE.

*PROJECT: 004730-REMOVAL OF CONTAMINANTS FROM DRINKING WATER BY REVERSE OSMOSIS

STARTING/ COMPLETION DATE : 07/77 - 01/80 : FY79
TASK CODE=C824A-S1T049 **EPA=R805207 ** (GRANT)

EPA OFFICER.: TJ SORG — EPA/MERL - CINC — 513-684-7370
INVESTIGATOR.: W DARBY — CHARLOTTE HARBOR WAT ASSN
W DARBY — CHARLOTTE HARBOR WAT ASSN

MILESTONES...: 07/78 -CONSTRUCT PILOT PLANT
05/79 -COMPLETE DEEP WELL TESTS
09/79 -COMPLETE SHALLOW WELL TESTS
01/80 -COMPLETE REPORT

PROGRAM ID...: (PE-824) DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 10-15 SAFE DRINKING WATER ACT
CURR. RESULTS: STUDIES ON FLUORIDE, NITRATE, ARSENIC AND SELENIUM FROM DEEP WELL WATER HAVE BEEN COMPLETED.

ORDIS CODES..: RECN-004730 SSIE-GMA 5889 EPA -R805207 TASK-C824A-S1T049
ORD -RC10830-1079 MAND-10-15 PE -824
LABT-EET

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT......: OBJECTIVE: THE OBJECTIVES ARE TO EVALUATE THE EFFECTIVENESS OF LOW AND HIGH PRESSURE REVERSE OSMOSIS TO REMOVE INORGANIC CONTAMINANTS FROM GROUND WATER; TO DETERMINE THE ENERGY AND OTHER OPERATING COSTS OF EACH SYSTEM; AND TO EVALUATE THE REMOVAL OF NATURAL OCCURRING ORGANIC MATERIAL FROM GROUND WATER. APPROACH: TWO SMALL FULL SCALE REVERSE OSMOSIS SYSTEMS EACH PRODUCING ABOUT 40,000 GPD WILL BE OPERATED IN PARALLEL. DEEP AND SHALLOW WELL WATER WILL BE SPIKED WITH VARIOUS CONCENTRATIONS OF INORGANIC CONTAMINANTS AND THE WATER SAMPLED TO DETERMINE REMOVALS. RESULTS TO DATE: STUDIES ON FLUORIDE, NITRATE, ARSENIC, AND SELENIUM FROM DEEP WELL WATER (TDS APPROXIMATELY 1300) HAVE BEEN COMPLETED.

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*PROJECT: 002251-FIELD INSTRUMENTATION FOR REAL-TIME MONITORING OF RESPIRABLE AND
                 NON-RESPIRABLE DUST CONCENTRATION IN THE AIR
                      STARTING/ COMPLETION DATE : 08/77 - 06/80 :   FY79
                      TASK CODE=G832B-EA-201 **EPA=R805222-02S1** (GRANT)
  EPA  OFFICER.: C  LEWIS                    EPA/ESRL - RTP                  919-541-3154
  INVESTIGATOR.: H  PATASHNICK               DUDLEY OBSERVATORY
  MILESTONES...: 09/78 -FIRST PROTOTYPE COMPLETED
                 09/79 -IMPROVED PROTOTYPE COMPLETED
                 06/80 -DELIVERY OF INSTRUMENTATION TO MEASURE AMBIENT AEROSOL MASS IN REAL
  PROGRAM ID...: (PE-832 )           ATMOS TRANS OF ENERGY RELATED POLLUTANTS
  FINAL OUTPUT.: DELIVERY OF INSTRUMENTATION TO MEASURE AMBIENT
                 AEROSOL MASS IN REAL TIME.
  MANDATE......: 10-02     CLEAN AIR ACT
  CURR. RESULTS: SATISFACTORY METHOD OF COLLECTING OF AEROSOL ON
                 MICROBALANCE DEMONSTRATED.  A 5 LITER/MINUTE FLOW
                 RATE ACHIEVED.  SERIES OF AMBIENT MEASUREMENTS AT
                 15 MINUTE INTERVALS OBTAINED.
  ORDIS CODES..: RECN-002251         SSIE-GMA  3789 2      EPA -R805222-02S1     TASK-G832B-EA-201
                 ORD -RG10B30-1079   LABN-G712B-BE-47      MAND-10-02
                 PE  -832                                  LABT-EPE

  PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: TO DEVELOP AN INSTRUMENT FOR REAL-TIME MEASUREMENT OF AMBIENT AEROSOL MASS. APPROACH: THE INSTRUMENT IS BASED ON A NEWLY DEVELOPED DEVICE --TAPERED ELEMENT OSCILLATING MICROBALANCE -- WHICH IS SIMILAR TO CLASSICAL QUARTZ CRYSTAL MICROBALANCE BUT WITHOUT MANY OF THE LATTER'S PROBLEMS. RESULTS TO DATE: A SATISFACTORY METHOD FOR COLLECTING OF AEROSOL ON THE MICROBALANCE HAS BEEN DEMONSTRATED: FILTRATION THROUGH A MEMBRANE FILTER CARTRIDGE ATTACHED TO THE END OF THE HOLLOW TAPERED ELEMENT POSITION OF THE MICROBALANCE. A 5 LITER/MINUTE FLOW RATE HAS BEEN ACHIEVED. A SERIES OF AMBIENT MEASUREMENTS AT 15 MINUTE INTERVALS HAS BEEN OBTAINED.

*PROJECT: 003359-"THIRTY-THREE TONS PER ACRE," A 23 MINUTE, 16MM SOUND FILM IN COLOR

STARTING/ COMPLETION DATE : 05/77 - 12/79 : FY79
TASK CODE=L770A-1-43 **EPA=R805226 ** (GRANT)

EPA OFFICER.: AG HORNSBY — EPA/ERL - ADA — 405-332-8800
INVESTIGATOR.: R MORGAN — UNKNOWN
MILESTONES...: 09/78 -FILM RELEASED
PROGRAM ID...: (PE-770) RENEWABLE RESOURCES
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: FILM RELEASED OCTOBER 1978 ENTITLED "HOLD THIS LAND". SUPPLEMENTAL GRANT AWARDED TO MAKE TEN SHORT SUBJECT FILMS OF INDIVIDUAL MANAGEMENT PRACTICES FROM FOOTAGE SHOT DURING FILM PROJECT.

ORDIS CODES..: RECN-003359	SSIE-GMA 3825 2	EPA -R805226	TASK-L770A-1-43
ORD -RL10B30-1079	LABN-L617A-03	MAND-10-01	
PE -770		LABT-EPE	

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: "THIRTY-THREE TONS PER ACRE," IS AN INSTRUCTIONAL FILM FOR FARMERS AND IRRIGATORS ABOUT TOPSOIL EROSION ON IRRIGATED FARMLAND. THE PURPOSE OF THE FILM IS TO PROMOTE THE USE OF IRRIGATION METHODS AND CULTURAL PRACTICES THAT ARE EFFECTIVE IN CONTROLLING FURROW EROSION AND THE POLLUTION OF RECEIVING STREAMS. THE FILM IS TWENTY-THREE MINUTES LONG AND IN COLOR WITH SOUND. THE WORKING TITLE, THIRTY-THREE TONS PER ACRE, IS A REFERENCE TO THE AMOUNT OF SEDIMENT ERODED FROM A SINGLE FIELD SHOWN IN THE FILM DURING THE COURSE OF ONE IRRIGATING SEASON. THE PRIMARY TARGET AUDIENCE TO WHICH THE FILM IS DIRECTED IS MADE UP OF FARMERS, IRRIGATORS, IRRIGATION DISTRICTS, CANAL COMPANIES, AND AGRI-BUSINESS INTERESTS. A SECONDARY TARGET AUDIENCE IS COMPOSED OF REPRESENTATIVES OF GOVERNMENTS, PRIVATE AND PUBLIC FINANCIAL INSTITUTIONS, AND AGRICULTURAL RESEARCH AND DESIGN CONCERNS. THE FILM HAS FOUR MAJOR OBJECTIVES: 1) TO INFORM THE TARGET AUDIENCE OF THE MAGNITUDE AND SIGNIFICANCE OF TOPSOIL LOSS AND RECEIVING STREAM POLLUTION DUE TO SURFACE IRRIGATION. 2) TO DEMONSTRATE INDIVIDUAL FINANCIAL LOSS RESULTING FROM IRRIGATION RELATED TOPSOIL EROSION. 3) TO STIMULATE FARMERS AND IRRIGATORS TO USE AVAILABLE TECHNOLOGY TO ESTABLISH EROSION CONTROL IRRIGATION PROGRAMS. 4) TO INFORM THE TARGET AUDIENCE OF CURRENT RESEARCH AND DEVELOPMENT IN EROSION CONTROL IRRIGATION METHODS AND TO ENCOURAGE RECEPTIVE ATTITUDES TOWARD IMPROVED IRRIGATION TECHNOLOGY. RESULTS TO DATE: FILM RELEASED OCTOBER 1978 ENTITLED "HOLD THIS LAND." SUPPLEMENTAL GRANT AWARDED TO MAKE TEN SHORT SUBJECT FILMS OF INDIVIDUAL MANAGEMENT PRACTICES FROM FOOTAGE SHOT DURING FILM PROJECT.

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*PROJECT: 000102-EVALUATION OF FLAMELESS AND HYDRIDE GENERATION ATOMIC ABSORPTION METHODS
                 FOR ARSENIC AND SELENIUM
                     STARTING/ COMPLETION DATE : 09/77 - 06/79 :   FY79
                     TASK CODE=A622B-03     **EPA=R805237-01  ** (GRANT)
  EPA  OFFICER.: ME GALES                 EPA/EMSL - CINC                   513-684-7307
  INVESTIGATOR.: JT KINARD                BENEDICT COLLEGE                  DEPT OF CHEM
  MILESTONES...: 06/78 -EVALUATING FLAMELESS ATOMIC ABSORPTION METHOD FOR AS AND SE
                 03/79 -EVALUATE THE FLAME HYDRIDE GENERATION METHOD OF AS AND SE
                 06/79 -DETERMINE OPTIMUM DIGESTION TIMES AND TEMPERATURE FOR AS AND SE
  PROGRAM ID...: (PE-622 )          TECHNICAL SUPPORT
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
                 20-13     DAA FOR DRINKING WATER
  CURR. RESULTS: DURING THE PAST BUDGET PERIOD, DR KINARD EVAULATED
                 THE FLAMELESS ATOMIC ABSORBTION METHOD FOR THE
                 DETERMINATION OF ARSENIC AND SELENIUM. HE STUDIED
                 THE INSTRUMNET SETTING, THE WORKING RANGES, OBTAINED
                 RECOVERY DATA AND DETERMINED THE RELATIVE STANDARD
                 DEVIATION FOR THESE ELEMENTS. HE HAS ALOS EVALUATED
                 THE FURNACES METHOD FOR THE DETERMINATION OF ARSENIC
                 AND SELENIUM.
  ORDIS CODES..: RECN-000102         SSIE-GMA  4332 2      EPA -R805237-01      TASK-A622B-03
                 ORD -RA10B30-5079   MAND-10-01            MAND-20-13
                 PE  -622                                  LABT-MTS

  PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-UPDATED   .     UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THIS RESEARCH COMPRISES A COMPARATIVE STUDY OF LEADING METHODS FOR THE DETERMINATION OF ARSENIC AND SELENIUM, AND SERVES TO DEMONSTRATE THE APPLICABILITY OF EACH FOR COMPLEX MATRICES THAT EXIST FOR SAMPLES SUCH AS INDUSTRIAL AND DOMESTIC EFFLUENTS. BY UTILIZING THE TECHNIQUES OF FLAME AND FLAMELESS ATOMIC ABSORPTION SPECTROPHOTOMETRY IT SHOULD BE POSSIBLE TO EFFECT THE APPRAISAL OF VARIOUS SAMPLE PRETREATMENT PROCEDURES INCLUDING THE PARR ACID DIGESTION BOMB TECHNIQUE FOR THE DETERMINATION OF TOTAL ARSENIC AND SELENIUM IN EFFLUENTS CHARGED WITH A VARIETY OF THEIR ORGANIC AND INORGANIC SPECIES. APPROACH: DR. KINARD WILL STUDY THE PROCEDURES FOR THE DIGESTION OF EFFLUENTS CONTAINING VARIOUS INORGANIC AND ORGANIC ARSENIC AND SELENIUM. HE WILL ALSO STUDY THE FIVE EXISTING METHODS FOR THE DETERMINATION OF THESE ELEMENTS AND PROVIDE PRECISION AND ACCURACY DATA FOR EACH. RESULTS TO DATE: DURING THE PAST BUDGET PERIOD DR. KINARD EVALUATED THE FLAMELESS ATOMIC ABSORPTION METHOD FOR THE DETERMINATION OF ARSENIC AND SELENIUM. HE STUDIED THE INSTRUMENT SETTING, THE WORKING RANGES, OBTAINED RECOVERY DATA AND DETERMINED THE RELATIVE STANDARD DEVIATION FOR THESE ELEMENTS. HE HAS ALSO EVALUATED THE FURNACES METHOD FOR THE DETERMINATION OF ARSENIC AND SELENIUM.

*PROJECT: 001888-REACTIONS OF DISSOLVED POLLUTANT IN AQUEOUS SOLUTIONS

STARTING/ COMPLETION DATE : 07/77 - 04/81 : FY78
TASK CODE=G603A-AH-16 **EPA=R805253-01 ** (GRANT)

EPA OFFICER.: JL DURHAM — EPA/ESRL - RTP
INVESTIGATOR.: C KUO — MISSISSIPPI STATE UNIV — SCH OF ENG/CHEM ENG
MILESTONES...: 07/79 -ORD REPORT ON OZONE DECOMPOSITION IN WATER
07/80 -INTERIM ORD REPORT ON OZONE-ORGANIC REACTIONS IN WATER
07/81 -ORD FINAL REPORT
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
MANDATE......: 10-02 CLEAN AIR ACT
ORDIS CODES..:

RECN-001888	SSIE-GMA 3881 1	EPA -R805253-01	TASK-G603A-AH-16
ORD -RG10B30-1078	LABN-G603A-AC-09	MAND-10-02	
PE -603		LABT-EPE	

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: THE OBJECTIVES OF THE PROPOSED RESEARCH ARE TO DETERMINE MECHANISMS AND RATE OF SULFURIC ACID AND SULFATES FORMATION FROM CATALYTIC OXIDATION OF SULFUR DIOXIDE, TO INVESTIGATE THE EFFECTS OF CATALYTIC IRON SALTS AND ORGANIC COMPOUNDS ON CONVERSION OF SULFUR DIOXIDE IN AQUEOUS SOLUTIONS AND TO ASSESS THE ROLE OF LIQUID PHASE OXIDATION IN THE FORMATION OF SULFATES AEROSOLS IN AMBIENT AND POLLUTED ATMOSPHERE. KINETIC EXPERIMENTS WILL BE CARRIED OUT IN LIQUID PHASE USING STOPPED-FLOW TECHNIQUE. MECHANISMS AND RATE OF OXIDATION OF SULFUR DIOXIDE BY OXYGEN AND OZONE IN AQUEOUS SOLUTIONS WILL BE DETERMINED UTILIZING THE KINETIC DATA. CATALYTIC EFFECTS OF IRON SALTS AND INFLUENCES OF ORGANIC COMPOUNDS ON THE REACTIONS WILL BE INVESTIGATED. THE PROPOSED RESEARCH WILL BE DIVIDED INTO SEVERAL SUBSYSTEMS TO STUDY THE KINETICS OF OXIDATION WITH OR WITHOUT CATALYTIC AGENTS AND ORGANIC COMPOUNDS. THE EXPERIMENTS WILL BE CONDUCTED AT TEMPERATURES RANGING FROM 10 TO 30 DEGREES C IN AQUEOUS SOLUTIONS WITH PH RANGING FROM 2 TO 11. ABSORBANCES AND, IN TURN, CONCENTRATIONS OF THE SOLUTIONS DURING REACTIONS WILL BE MEASURED AND ANALYZED TO DETERMINE THE REACTION KINETICS.

*PROJECT: 005254-VENTILATORY RESPONSES OF FISH TO FLUCTUATING APPLICATIONS OF TOXICANTS

STARTING/ COMPLETION DATE : 07/77 - 01/80 : FY79
TASK CODE=N820A-0040 **EPA=R805274 ** (GRANT)

EPA OFFICER.: WB HORNING EPA/ERL - DULUTH 513-684-8601
INVESTIGATOR.: J CAIRNS DEPT. OF BIOLOGY VIRGINIA POLYTECHNIC INST. & STATE
MILESTONES...: 01/80 -FINAL REPORT COMPLETED
PROGRAM ID...: (PE-820) FRESHWATER ECO EFFECTS
MANDATE......: 30-99 AQUATIC TOXICOLOGY
CURR. RESULTS: MORTALITY LEVELS DETERMINED IN ACUTE BIOASSAY ARE BEING USED IN SUBSEQUENT COMPUTER MONITORED TESTS USING VARIOUS MODES OF TOXICANT APPLICATION.
ORDIS CODES..: RECN-005254 SSIE-GMA 4414 2 EPA -R805274 TASK-N820A-0040
ORD -RN10B30-3079 MAND-30-99 PE -820
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: TO DETERMINE HOW THE EFFECTS OF A SUBLETHAL AMOUNT OF TOXICANT ON FISH VENTILATORY BEHAVIOR VARIES WITH THE PATTERN OF ITS APPLICATION. A PRIMARY OBJECTIVE IS TO DETERMINE THE MANNER IN WHICH A VARYING APPLICATION PATTERN OF SUBLETHAL QUANTITIES OF A TOXICANT WILL EFFECT THE VENTILATORY BEHAVIOR OF THE BLUEGILL (LEPOMIS MACROCHIRUS). APPROACH: A MICRO-COMPUTER IS BEING USED TO PRECISELY CONTROL TOXICANT LEVELS AND MONITOR FISH RESPONSES INCLUDING BREATHING AND COUGHING RATES.

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*PROJECT: 000628-RESEARCH STUDY FOR CONTINUING DOCUMENTATION OF PURIFYING DOMESTIC SEWAGE
                 BY USE OF AQUATIC PLANTS - KNOWN AS THE MPI SYSTEM
                     STARTING/ COMPLETION DATE : 09/77 - 10/80 :   FY79
                     TASK CODE=C822B-03D210 **EPA=R805279     ** (GRANT)
  EPA  OFFICER.: RF LEWIS                EPA/MERL - CINC                513-684-7644
  INVESTIGATOR.: JE OCONNOR              MOULTON NIGUEL WATER DIST
  MILESTONES...: 06/78 -PLANNED INCREMENTAL FUNDING COMPLETED
                 04/79 -UNPLANNED SUPPLEMENTAL FUNDING COMPLETED
                 11/79 -EXPERIMENTAL WORK COMPLETED
                 05/80 -FINAL REPORT SUBMITTED TO EPA PROJECT OFFICER
  PROGRAM ID...: (PE-822 )         POINT SOURCE TECH DEV (WASTEWATER SYS)
  MANDATE......: 10-01      FEDERAL WATER POLLUTION CONTROL ACT
  CURR. RESULTS: MOULTON NIGUEL SYSTEM REMOVES APPROX 25% OF NUTRIENTS
                 FROM SECONDARY EFFLUENTS AT RATE OF 25000 GPD.  SYSTEM
                 MEETS FEDERAL SECONDARY EFFLUENT STANDARDS.
  ORDIS CODES..: RECN-000628       SSIE-GMA  3970 2      EPA -R805279        TASK-C822B-03D210
                 ORD -RC10B30-1079  LABN-C611B-7056      MAND-10-01
                 PE  -822                                LABT-EET

  PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH    DATA-UPDATED        UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: (1) OBTAIN AND MONITOR PERFORMANCE DATA FOR AT LEAST A 12-MONTH PERIOD OF A PROPERLY DESIGNED AND WELL OPERATED BIOLOGICAL WATER PURIFICATION PROCESS KNOWN AS THE MAX PLANCK INSTITUTE SYSTEM (MPI SYSTEM) FOR TREATMENT OF DOMESTIC SEWAGE. (2) OBTAIN AND COLLECT DATA FOR THE EVALUATION OF THE RELIABILITY AND EFFECTIVENESS OF THE MPI SYSTEM IN: (A) PURIFICATION OF RAW DOMESTIC SEWAGE, (B) TRANSFORMATION OF SLUDGE, AND (C) REMOVAL OF NUTRIENTS FROM SECONDARY TREATMENT EFFLUENT. APPROACH: DATA WILL BE COLLECTED AND DOCUMENTED ON THE OPERATION AND PERFORMANCE OF A MULTI-TRENCH FACILITY, USING THE AQUATIC PLANTS KNOWN AS PHRAGMITES (REED) AND SCIRPUS (BULRUSH) AS FOLLOWS: (1) RECORD SEWAGE INFLUENT AND EFFLUENT VARIATIONS IN FLOW, AIR, TEMPERATURE, SUNLIGHT AND PRECIPITATION DAILY. (2) COMPOSITE SAMPLE INFLUENT DOMESTIC SEWAGE, EFFLUENT FROM FILTER TRENCHES, AND EFFLUENT FROM ELIMINATION TRENCHES TO DETERMINE REMOVAL OF ORGANIC, INORGANIC, AND PATHOGENIC POLLUTANTS INCLUDING BOD5 AND SUSPENDED SOLIDS. RESULTS TO DATE: THE MOULTON NIGUEL MPI SYSTEM REMOVES APPROXIMATELY 25 PERCENT OF THE NUTRIENTS FROM SECONDARY EFFLUENTS AT A FLOW RATE OF 25,000 GPD (95 M3/DAY). TREATING RAW WASTEWATER AT A RATE OF 25,000 GPD (95 M3/DAY) THE SYSTEM MEETS FEDERAL SECONDARY EFFLUENT STANDARDS.

*PROJECT: 002200-ION CHROMATOGRAPHY OF AROMATIC AMINES

STARTING/ COMPLETION DATE : 07/77 - 11/80 : FY79
TASK CODE=G712B-BB-007 **EPA=R805298-01 ** (GRANT)

EPA OFFICER.: JD MULIK EPA/ESRL - RTP 919-541-3064
INVESTIGATOR.: JO FROHLIGER UNIV OF PITTSBURGH GRAD SCH OF PUBLIC HLTH
MILESTONES...: 08/78 -METHODOLOGY DEVELOPED
11/80 -ORD REPORT ON METHOD FOR ANALYSIS OF AROMATIC AMINES
PROGRAM ID...: (PE-712) CHARAC. & MEASUREMENT METHODS DEVELOPMENT
FINAL OUTPUT.: METHOD FOR ANALYSIS OF AROMATIC AMINES.
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: TENTATIVE ION CHROMATOGRAPHIC PROCEDURE DEVELOPED.
PLANS MADE TO TEST OR EVALUATE METHOD.

ORDIS CODES..: RECN-002200	SSIE-GMA 3772 2	EPA -R805298-01	TASK-G712B-BB-007
ORD -RG10B30-1079	LABN-G712B-BE-006	MAND-10-02	
PE -712		LABT-EPE	

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-BEING UPDATED UPDATED- OCT-DEC 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS RESEARCH PROJECT IS TO DEVELOP A LIQUID CHROMATOGRAPHIC METHOD FOR THE SEPARATION AND ANALYSIS OF AMINES FOUND IN ENVIRONMENTAL SAMPLES. THE LIQUID CHROMATOGRAPHIC METHOD TO BE UTILIZED IS A MODIFICATION OF ION CHROMATOGRAPHY AS DESCRIBED BY H. SMALL, T.S. STEVENS AND W.C. BAUMAN, "NOVEL ION EXCHANGE CHROMATOGRAPHIC METHOD USING CONDUCTIMETRIC DETECTION," ANAL. CHEM. 47, 1801 (1975). THE AMINES TO BE EXAMINED ARE AROMATIC AMINES, MANY OF WHICH ARE KNOWN OR SUSPECTED CARCINOGENS. THE ENVIRONMENTAL SAMPLES TO BE UTILIZED WILL BE OBTAINED ON HI-VOLUME FILTERS. THESE FILTERS WILL BE COLLECTED IN THE VICINITY OF SOURCES OF AMINES SUCH AS COKE WORKS AND DYE MANUFACTURING FACILITIES. EMISSIONS FROM THESE TYPES OF SOURCES HAVE BEEN IMPLICATED IN LUNG AND BLADDER CANCERS. FINAL OUTPUT: METHOD FOR THE ANALYSIS OF AROMATIC AMINES.

*PROJECT: 005039-POTENTIAL IMPACT OF ACIDIFIED PRECIPITATION ON ELEMENT CYCLING AND PRODUCTION IN SOUTHERN APPALACHIAN DECIDUOUS FORESTS

STARTING/ COMPLETION DATE : 05/78 - 04/79 : FY79
TASK CODE=M602 -002 **EPA=R805305-01 ** (GRANT)

EPA OFFICER.: D WEBER EPA/ERL - CORVALLIS 503-757-4629
INVESTIGATOR.: B HAINES UNIV OF GEORGIA GRADUATE SCH
MILESTONES...: 04/79 -FINAL REPORT
PROGRAM ID...: (PE-602) HEALTH AND ECOLOGICAL EFFECTS- ECOL. PROC. AND EFFECTS
FINAL OUTPUT.: REPORT TO HELP SET NATL SECONDARY AIR QUAL STAND
MANDATE......: 10-02 CLEAN AIR ACT

ORDIS CODES..: RECN-005039	SSIE-GMA 6074	EPA -R805305-01	TASK-M602 -002
ORD -RM10B30-1079	LABN-M602A-025	MAND-10-02	
PE -602		LABT-EPE	

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO DETERMINE THE EFFECTS OF SIMULATED ACID RAIN ON NUTRIENT CYCLING AND THE PRODUCTIVITY OF SELECTED DECIDUOUS FOREST SPECIES. EXPERIMENTAL WORK INVOLVING THE EFFECTS OF SIMULATED ACIDIC RAIN ON ROOTS, LEAVES AND SOILS FORM THE BASIS FOR THE MODELING EFFORT. SIX SPECIES OF TREES ARE INVOLVED.

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*PROJECT: 005048-EFFECTS OF CONTROLLED SULFUR DIOXIDE FUMIGATION ON PRIMARY PRODUCER AND INVERTEBRATE CONSUMERS IN A MIXED PRAIRIE ECOSYSTEM

STARTING/ COMPLETION DATE : 06/77 - 06/80 : FY79
TASK CODE=M831 -003 **EPA=R805320-03 ** (GRANT)

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EPA  OFFICER.: EM PRESTON            EPA/ERL - CORVALLIS                 503-757-4636
INVESTIGATOR.: JL DODD               COLORADO STATE UNIV                 NAT RESOURCE ECOLOGY LAB
MILESTONES...: 06/80 -FINAL REPORT
PROGRAM ID...: (PE-831 )         TRANS,FATE, AND EFFECTS OF ENERGY REL POLLUTANTS
FINAL OUTPUT.: REPORT DEV. CAPACITY TO PREDICT ECOLOGICAL IMPACTS
               OF COAL-FIRED POWER PLANT EMISSIONS BEFORE DAMAGE.
MANDATE......: 10-99    ENERGY REORGANIZATION ACT
ORDIS CODES..: RECN-005048          SSIE-GMA  6079      EPA -R805320-03      TASK-M831 -003
               ORD -RM10B30-1079    MAND-10-99          PE  -831
                                    LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH   DATA-UPDATED         UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: INVESTIGATE THE EFFECTS OF SULFUR DIOXIDE ON PHOTOSYNTHESIS RESPIRATION AND WATER RELATIONS OF THE DOMINANT SPECIES AND BIOMASS DYNAMICS AND PRIMARY PRODUCTION OF THE ENTIRE PLANT COMMUNITY; INVERTEBRATE CONSUMER INVESTIGATIONS WILL FOCUS UPON POPULATION DYNAMICS OF GRASSHOPPERS AND SINGLE SAMPLE ASSESSMENT OF NEMATODE AND MICRO-ARTHROPOD POPULATIONS. FINAL OUTPUT: REPORT THAT DEVELOPS THE CAPACITY TO PREDICT THE ECOLOGICAL IMPACTS OF COAL-FIRED POWER PLANT EMISSIONS BEFORE DAMAGE OCCURS.

*PROJECT: 003691-ASSESSMENT OF BENTHIC MACROINVERTEBRATES IN LAKE MICHIGAN

STARTING/ COMPLETION DATE : 06/77 - 01/79 : FY78
TASK CODE=N608A-026 **EPA=R805333-01 ** (GRANT)

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EPA  OFFICER.: WR SWAIN              EPA/ERL - DULUTH
INVESTIGATOR.: SC MOZLEY             UNIV OF MICHIGAN                    GR LAKES RES DIV
               MW WINNELL            UNIV OF MICHIGAN                    GR LAKES RES DIV
MILESTONES...: 01/79 -FINAL REPORT: DESCRIBING MACROINVERTEBRATES IN LAKE MICHIGAN
PROGRAM ID...: (PE-608 )         ECOLOGICAL PROCESSES AND EFFECTS
MANDATE......: 10-01    FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003691          SSIE-GMA  4419 1    EPA -R805333-01      TASK-N608A-026
               ORD -RN10B30-1078    LABN-N769 -026      MAND-10-01
               PE  -608                                 LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH   DATA-UPDATED         UPDATED-  OCT-DEC 77
                                    ACCESS-PUBLIC
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ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO CONSTRUCT A THOROUGH DESCRIPTION OF THE COMPOSITION, DISTRIBUTION AND CORRESPONDENCE TO PROMINENT ENVIRONMENTAL FEATURES (E.G., SEDIMENT TEXTURE, CONCENTRATIONS OF TOXIC CHEMICALS) OF BENTHIC ANIMALS IN LAKE MICHIGAN. A SET OF 302 SAMPLES ARRAYED OVER THE ENTIRE LAKE WAS COLLECTED BY THE CANADA CENTRE FOR INLAND WATERS IN 1975. THESE SAMPLES WILL BE PROCESSED UNDER THE PRESENT CONTRACT AND SUPPLEMENTED BY AN ADDITIONAL 252 SAMPLES CONCENTRATED IN THE NEARSHORE AREAS (LESS THAN 60 M DEEP) OF THE MAIN BASIN IN JULY 1977. DATA FROM BOTH SETS OF SAMPLES WILL BE ANALYZED PARTICULARLY FOR INFORMATION ABOUT INDICATOR SPECIES, SO THAT A BENCHMARK FOR FUTURE COMPARISONS AND ASSESSMENTS OF RELATIVE IMPROVEMENT OR DETERIORATION OF THE BENTHIC ENVIRONMENT WILL BE AVAILABLE. DESCRIPTIONS OF OTHER BASIC CHARACTERISTICS OF THE BENTHOS, SUCH AS ARRANGEMENTS OF SPECIES INTO ASSEMBLAGES, AND GEOGRAPHICAL GRADIENTS IN ASSEMBLAGES WHICH ARE RELATED TO CLIMATE OR CIRCULATION PATTERNS IN THE LAKE WILL ALSO BE UNDERTAKEN.

*PROJECT: 001157-DEVELOPMENT OF A TISSUE-SELECTIVE IN VIVO BIOASSAY FOR ENVIRONMENTAL AGENTS PRODUCING DNA DAMAGE
STARTING/ COMPLETION DATE : 10/77 - 06/82 : FY79
TASK CODE=D607B-002 **EPA=R805337-02 ** (GRANT)

EPA OFFICER.:	RJ BULL	EPA/HERL - CINC	513-684-7213
INVESTIGATOR.:	RW HART	OHIO STATE UNIV	COLL OF MED
	DT WITIAK	OHIO STATE UNIV	COLL OF MED
	A KOESTNER	OHIO STATE UNIV	COLL OF MED

MILESTONES...: 12/79 -CHARACT. OF NUCLEIC ACID DAMAGE WITH CARCINOGENIC ANALOGUES
12/80 -CHARACT. OF DNA DAMAGE IN SUSCEPTIBLE VS. NON-SUSCEPTIBLE SPECIES
12/81 -CHARACT. OF TISSUE-SPECIFIC TUMOR FORMATION AND DNA-DAMAGE
06/82 -RESULTS IN NON-SUSCEPTIBLE SPECIES

PROGRAM ID...: (PE-607) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
FINAL OUTPUT.: RESULTS IN NON-SUSCEPTIBLE SPECIES
MANDATE......: 30-99 CHEMICAL CARCINOGENESIS
CURR. RESULTS: STUDIES DURING YEAR 01 HAVE INDICATED THAT PRESENT DIRECTION IS RATIONAL APPROACH TO FULFILLMENT OF ULTIMATE OBJECTIVE.

ORDIS CODES..:	RECN-001157	SSIE-GMA 4356 2	EPA -R805337-02	TASK-D607B-002
	ORD -RD10B31-3079	LABN-D614B-044	MAND-30-99	
	PE -607		LABT-OHR	
PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

COMMENT......: FY=79,RC-D,AH=RD,PE=629,$00070000
FY=79,RC=D,AH=RD,PE=775,$00110000
FY=79,RC=D,AH=RD,PE=607,$00302000

ABSTRACT.....: OBJECTIVE: THE OVERALL OBJECTIVE OF THIS PROGRAM IS THE DEVELOPMENT AND QUANTITATION OF A RAPID, INEXPENSIVE, TISSUE SPECIFIC IN VIVO BIOASSAY FOR DNA DAMAGE INDUCED BY ENVIRONMENTAL AGENTS. SINCE MOST CARCINOGENS AND MUTAGENS DAMAGE DNA IN VIVO, THIS ASSAY IS AIMED AT THE DIRECT DETECTION AND QUANTITATION OF SUCH DAMAGE IN NONRADIOLABELLED DNA. APPROACH: BY USE OF MICROANALYTICAL CHEMICAL PROCEDURES BEING DEVELOPED WITHIN THIS PROGRAM, DNA DAMAGE CAN BE DETECTED USING PUNCH BIOPSIES OF AS FEW AS 4 X 104 CELLS AT NEAR SUBLETHAL LEVELS OF CARCINOGEN EXPOSURE. DETECTION OF DNA DAMAGE IS BEING CARRIED OUT BY THE APPLICATION OF A COMBINATION OF TECHNIQUES INCLUDING: ENDONUCLEASE SENSITIVE SITE RECOGNITION, SUCROSE GRADIENT SEDIMENTATION, AGAROSE GEL ELECTROPHORESIS, AND IMMUNOFLUORESCENCE. QUANTITATION IS BEING ACCOMPLISHED BY THE USE OF 14C-LABELLED CARCINOGENS OF HIGH SPECIFIC ACTIVITY, DIRECT MEASUREMENT OF RADIOLABELLED CARCINOGEN BINDING IN VIVO USING SEPHADEX LH-20 CHROMATOGRAPHY, HIGH PRESSURE LIQUID CHROMATOGRAPHY AND HIGH RESOLUTION GC/MS. PREDICTION IS BEING EVALUATED IN THE RODENT SYSTEM BY STANDARD HISTOCHEMICAL AND PATHOBIOLOGICAL PROCEDURES. RESULTS TO DATE: STUDIES DURING THE YEAR 01 HAVE INDICATED THAT THE PRESENT DIRECTION IS A RATIONAL APPROACH TO THE FULFILLMENT OF OUR ULTIMATE OBJECTIVE.

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*PROJECT: 004787-RURAL OXIDANT STUDIES AND THE ROLE OF NOX IN RURAL OXIDATION FORMATION

                    STARTING/ COMPLETION DATE : 06/77 - 08/80 :    FY79
                    TASK CODE=G603A-AA-017 **EPA=R805343     ** (GRANT)
EPA  OFFICER.: W  LONNEMAN             EPA/ESRL - RTP                     919-541-2829
INVESTIGATOR.: H  WESTBERG             WASHINGTON STATE UNIV              SCH OF ENG
PROGRAM ID...: (PE-603 )          HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
ORDIS CODES..: RECN-004787          SSIE-GMA  5796       EPA -R805343        TASK-G603A-AA-017
               ORD -RG10B30-4079    PE  -603
PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH    DATA-UPDATED        UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: AMBIENT AIR MEASUREMENTS MADE FOR THE DETAILED HYDROCARBONS, OXIDES OF NITROGEN, OZONE, HALOCARBONS AND OTHER POLLUTANTS BY AN AIRCRAFT AND GROUND LEVEL SAMPLING PROGRAM AT SEVERAL LOCATIONS THROUGHOUT THE UNITED STATES. THE PURPOSE OF THESE STUDIES ARE TO INVESTIGATE THE TRANSPORT AND THE TRANSFORMATION PROCESSES OF POLLUTANTS IN URBAN AND RURAL AREAS. APPROACH: SOPHISTICATED STATE-OF-THE-ART INSTRUMENTATION IS UTILIZED IN THESE STUDIES FOR POLLUTANT MEASUREMENT. BOTH GROUND LEVEL AND AIRCRAFT SAMPLING PROGRAMS ARE UTILIZED TO INVESTIGATE THE TRANSPORT OF POLLUTANTS FROM AN URBAN AREA TO DOWNWIND RURAL OR OTHER URBAN AREAS. RESULTS TO DATE: SEVERAL REPORTS ARE AVAILABLE FROM PAST FIELD STUDY EFFORTS BY WASHINGTON STATE UNIVERSITY. THESE REPORTS IN GENERAL IDENTIFY THE RELATIONSHIP BETWEEN UPWIND URBAN TRANSPORT TO DOWNWIND HIGH RURAL OZONE LEVELS. HIGH RURAL OZONE IS ASSOCIATED WITH HIGHER CONCENTRATIONS OF TRANSPORTED O3 PRECURSOR COMPOUNDS FROM ANTHROPOGENIC SOURCES.

*PROJECT: 000809-INVESTIGATION OF A FLUID BED CARBON REGENERATION SYSTEM AT MANCHESTER, NEW HAMPSHIRE
STARTING/ COMPLETION DATE : 10/77 - 10/81 : FY79
TASK CODE=C824A-01T45 **EPA=R805371-01 ** (GRANT)

EPA OFFICER.: J DEMARCO — EPA/MERL - CINC — 513-684-7282
INVESTIGATOR.: R BEAURIVAGE — MANCHESTER WATER WORKS
D PARIS — MANCHESTER WATER WORKS
D KITTREDGE — MANCHESTER WATER WORKS
PROGRAM ID...: (PE-824) DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 10-09 REORGANIZATION PLAN # 3
10-03 TOXIC SUBSTANCES CONTROL ACT
10-05 RESOURCE CONSERVATION AND RECOVERY ACT
10-02 CLEAN AIR ACT
CURR. RESULTS: ALL EQUIPMENT ON SITE WITH ENTIRE FACILITY EXPECTED IN MAY 79. COMPLETE MECHANICAL SHAKEDOWN RUN OF ACTIVATED CARBON TRANSPORT SYSTEM CONDUCTED FOR ONE ACTIVATED CARBON FILTER.

ORDIS CODES..:	RECN-000809	SSIE-GMA 4029 2	EPA -R805371-01	TASK-C824A-01T45
	ORD -RC10B30-1079	LABN-C614A-7149	MAND-10-09	
	MAND-10-03	MAND-10-05	MAND-10-02	PE -824
		LABT-EET		
PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT......: OBJECTIVE: THE OBJECTIVES OF THIS PROJECT WILL BE TO EVALUATE BOTH THE COST AND PERFORMANCE OF A CARBON REGENERATION SYSTEM UTILIZING FLUID BED PRINCIPLES, THE COST AND CAPABILITIES OF A SEMIAUTOMATIC SYSTEM FOR CARBON HANDLING, AND THE ADSORPTIVE EFFECTIVENESS OF VIRGIN CARBON AND REGENERATED CARBON FOR REMOVAL OF CHLORINATED ORGANIC SUBSTANCES FROM DRINKING WATER. IT HAS RECENTLY BEEN ESTABLISHED THAT THE COMBINATION OF CHLORINE PLUS NATURAL PRECURSOR SUBSTANCES RESULTS IN THE FORMATION OF SUSPECTED HUMAN CARCINOGENS KNOWN AS TRIHALOMETHANES (CHLOROFORM, BROMOFORM, ETC.) GRANULAR ACTIVATED CARBON IS RECOGNIZED AS BEING AN EFFECTIVE MEANS OF REMOVING BOTH TRIHALOMETHANES AND PRECURSORS, BUT LITTLE IS KNOWN ABOUT THE COST AND REMOVAL PERFORMANCE UNDER ACTUAL OPERATING CONDITIONS. APPROACH: THE GENERAL APPROACH WILL BE TO UTILIZE ONE OF THE FOUR CARBON FILTERS AT THE TREATMENT PLANT AS A TEST FILTER, TO FILL ONE-HALF OF THE FILTER WITH VIRGIN CARBON, THE REMAINING HALF WITH ONCE-REGENERATED CARBON, AND THEN TO COMPARE THE RATE OF TRIHALOMETHANE REMOVAL BETWEEN THE FILTERS OVER A REPEATED NUMBER OF REGENERATION CYCLES. CONSTRUCTION OF THE FACILITY IS SCHEDULED TO BEGIN IN APRIL, 1978 AND TO BE COMPLETED IN THE FALL OF 1978. THE CARBON WILL THEN BE REGENERATED ON A NEAR CONTINUOUS BASIS OVER A TWO-YEAR MONITORING AND EVALUATION PERIOD BEGINNING IN JANUARY, 1979. INVESTIGATIVE WORK IS TO BE CARRIED OUT BY THE WATER SUPPLY STAFF OF THE MANCHESTER WATER WORKS WORKING IN CONJUNCTION WITH THE WATER SUPPLY RESEARCH STAFF OF EPA. RESULTS TO DATE: ALL EQUIPMENT IS ON-SITE WITH THE ENTIRE FACILITY COMPLETION EXPECTED IN MAY, 1979. A COMPLETE MECHANICAL SHAKEDOWN RUN OF THE ACTIVATED CARBON TRANSPORT SYSTEM WAS CONDUCTED FOR ONE ACTIVATED CARBON FILTER.

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U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R805379 01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT
Analysis of NCHS Data on Nonmelanoma Skin Cancer

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT:

E. L. Scott, Professor of Statistics
University of California, Berkeley

NAME AND ADDRESS OF APPLICANT INSTITUTION
The Regents of the University of California
C/O Campus Research Office
M11 Wheeler Hall, University of California, Berkeley, California, 94720

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The principal objective of this project is to estimate the increase of skin cancer that will result from increasing ultraviolet radiation by depleting stratospheric ozone. With the cooperation of the National Center of Health Statistics, we propose to use three new sources of data:

1) cases of skin cancer (largely nonmelanoma) and of keratosis observed by dermatologists in the special Health and Nutrition Examination Survey (HANES) in 65 different localities in the United States.

2) cases of skin cancer, separately melanoma and nonmelanoma by site, observed in the National Ambulatory Medical Care Survey by a sample of physicians in different localities in the United States.

3) cases of skin cancer, separately melanoma and non melanoma by site, observed in the sample survey of Discharges from Short-Stay Hospital Care in different localities in the United States.

*PROJECT: 000682-MONITORING SEPTAGE ADDITION TO WASTEWATER TREATMENT PLANTS

STARTING/ COMPLETION DATE : 08/77 - 02/80 : FY79
TASK CODE=C822B-06T10 **EPA=R805406 ** (GRANT)

EPA OFFICER.: SW HATHAWAY — EPA/MERL - CINC — 513-684-7615
INVESTIGATOR.: BA SEGALL — UNIV OF LOWELL
CR OTT — UNIV OF LOWELL
WB MOELLER — UNIV OF LOWELL

MILESTONES...: 09/78 -COMPLETION OF DATA COLLECTON AT THREE SITES
12/78 -SUBMISSION OF FINAL REPORT
09/79 -COMPLETION OF DATA COLLECTION EFFORTS
11/79 -SUBMISSION OF FINAL REPORT
02/80 -PUBLISHED RESEARCH REPORT

PROGRAM ID...: (PE-822) POINT SOURCE TECH DEV (WASTEWATER SYS)

MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 WASTEWATER TREATMENT

CURR. RESULTS: MOST PLANTS ABLE TO HANDLE SIGNIFICANT QUANTITY OF SEPTAGE WITHOUT OPERATIONAL DISRUPTION. SLUDGE PRODUCTION INCREASED SUBSTANTIALLY. LAB WORK UNDER SUPPLEMENTAL GRANT UNDERWAY.

ORDIS CODES..: RECN-000682	SSIE-GMA 3962 2	EPA -R805406	TASK-C822B-06T10
ORD -RC10B30-5079	LABN-C611B-7094	MAND-10-01	
MAND-30-99	PE -822		LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
	ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: TO EVALUATE THE EFFECTS OF SEPTIC TANK WASTE ADDITION TO WASTEWATER TREATMENT FACILITIES. IMPACTS ON SEDIMENTATION, BIOLOGICAL OXIDATION, AND SLUDGE HANDLING PROCESSES WILL BE INVESTIGATED WITH RESPECT TO PERFORMANCE, OPERATION AND MAINTENANCE, AND COST. APPROACH: THREE WASTEWATER TREATMENT FACILITIES (EXPERIMENTAL PILOT PLANT, EXTENDED AERATION, AND CONVENTIONAL ACTIVATED SLUDGE) WILL BE CLOSELY MONITORED AT VARIOUS LEVELS OF SEPTAGE LOADING TO THE LIQUID STREAM. LABORATORY AND FULL-SCALE WORK WILL ALSO DETERMINE THE FEASIBILITY OF DIRECT INTRODUCTION INTO THE SLUDGE HANDLING TRAIN. RESULTS TO DATE: DEPENDING ON THE RELATIVE CAPACITY OF THE PROCESSES, MOST PLANTS ARE ABLE TO HANDLE A SIGNIFICANT QUANTITY OF SEPTAGE WITHOUT OPERATIONAL DISRUPTION. SLUDGE PRODUCTION IS INCREASED SUBSTANTIALLY. THE REPORT FROM THE INITIAL GRANT WILL BE PUBLISHED SOON. LAB WORK UNDER THE SUPPLEMENTAL GRANT IS CURRENTLY UNDERWAY.

*PROJECT: 003455-IMPACT OF OXIDANT AIR POLLUTANTS ON A WESTERN CONIFEROUS FOREST ECOSYSTEM
STARTING/ COMPLETION DATE : 07/77 - 05/80 : FY79
TASK CODE=M602 -002 **EPA=R805410-02 ** (GRANT)

EPA OFFICER.: RG WILHOUR EPA/ERL - CORVALLIS 503-757-3634
INVESTIGATOR.: OC TAYLOR UNIV OF CALIFORNIA AIR POLL RES CTR
MILESTONES...: 05/80 -FINAL REPORT
PROGRAM ID...: (PE-602) HEALTH AND ECOLOGICAL EFFECTS- ECOL. PROC. AND EFFECTS
FINAL OUTPUT.: REPORT TO HELP SET NATL SECONDARY AIR QUAL STAND
MANDATE......: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-003455 SSIE-GMA 4230 2 EPA -R805410-02 TASK-M602 -002
ORD -RM10830-1079 LABN-M602A-025 MAND-10-02
PE -602 LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: CONTINUANCE OF GRANT RESEARCH PROGRAM TO DETERMINE THE EFFECT OF LONG TERM EXPOSURE TO AMBIENT OXIDANT AIR POLLUTANTS ON A WESTERN CONIFEROUS FOREST ECOSYSTEM AND TO DEVELOP PREDICTIVE MODELS FOR THE SYSTEM. FINAL OUTPUT: A REPORT WHICH WILL HELP SET NATIONAL SECONDARY AIR QUALITY STANDARDS ADEQUATE TO PROTECT THE ENVIRONMENT.

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*PROJECT: 002831-BIOSYNTHESIS OF N-NITROSO COMPOUNDS FROM TRACE LEVEL PRECURSORS

                   STARTING/ COMPLETION DATE : 10/76 - 03/80 :   FY79
                   TASK CODE=J775D-05     **EPA=R805431-02  ** (GRANT)
EPA  OFFICER.: JA SANTOLUCITO            EPA/EMSL - LAS VEGAS                702-736-2969
INVESTIGATOR.: SS EPSTEIN                UNIV OF ILLINOIS                    MED CTR/ENV HLTH SCI
               ZM IQBAL                  UNIV OF ILLINOIS                    MED CTR/ENV HLTH SCI
MILESTONES...: 09/78 -REPORT ON ANALYTICAL METHOD FOR DETECTION OF NITROSAMINES
               09/79 -REPORT ON BIOSYNTHESIS OF DIMETHYL NITROSAMINE IN THE MOUSE
               12/79 -REPORT ON A STRATEGY FOR CARCINOGEN PRECURSOR EXPOSURE MONITORING
PROGRAM ID...: (PE-775 )          ANTICIPATORY
FINAL OUTPUT.: ASSESSMENT OF RATES OF IN-VIVO BIOSYNTHESIS OF
               COMPOUNDS FROM ENVIRONMENTAL LEVELS OF PRECURSORS.
MANDATE......: 30-99     EXPOSURE MONITORING
CURR. RESULTS: COMPILATION OF DATA ON IN VIVO NITROSATION.
               IMPROVEMENTS COMPLETED ON NITROSAMINE ANALYTICAL METHOD.
               ESTABLISHED IN VIVO NITROSATION FROM NO2 AT 25 PPM.
ORDIS CODES..: RECN-002831          SSIE-GMA  4082 2      EPA -R805431-02       TASK-J775D-05
               ORD -RJ10B30-3079    MAND-30-99            PE  -775
                                    LABT-MTS

PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE/APPROACH: TO INVESTIGATE THE BIOSYNTHESIS OF N-NITROSO COMPOUNDS (BOTH VOLATILE AND NONVOLATILE) FROM TRACE LEVELS OF THEIR AMINE AND NITROSATING PRECURSORS USING THERMAL ENERGY ANALYZER TECHNIQUES WITH FROZEN ANIMAL PROCEDURES. FINAL OUTPUT: ASSESSMENT OF THE RATES OF IN-VIVO BIOSYNTHESIS OF N-NITROSO COMPOUNDS FROM ENVIRONMENTAL LEVELS OF PRECURSORS; CATALYTIC AND INHIBITORY EFFECTS OF DIFFERENT AGENTS ON THE NITROSAMINE BIOSYNTHESIS; ANALYTICAL METHODS FOR DETECTING LOW LEVELS OF NITROSAMINES. RESULTS TO DATE: 1. COMPILATION OF DATA ON IN VIVO NITROSATION. 2. IMPROVEMENTS WERE COMPLETED ON NITROSAMINE ANALYTICAL METHOD. 3. ESTABLISHED IN VIVO NITROSATION FROM NO2 AT 25 PPM.

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*PROJECT: 001083-EVALUATION OF THE HEALTH RISKS ASSOCIATED WITH THE TREATMENT AND
                 DISPOSAL OF MUNICIPAL WASTEWATER AND SLUDGE
                    STARTING/ COMPLETION DATE : 01/78 - 02/80 :    FY79
                    TASK CODE=D607A-013C   **EPA=R805445-01  ** (GRANT)
  EPA  OFFICER.: HP PAHREN                EPA/HERL - CINC                     513-684-7217
  INVESTIGATOR.: CS CLARK                 UNIV OF CINCINNATI                  CIV & ENV ENG DEPT
                 D  ALEXANDER             UNIV OF CINCINNATI                  CIV & ENV ENG DEPT
                 AB BJORNSON              UNIV OF CINCINNATI                  CIV & ENV ENG DEPT
  MILESTONES...: 12/78 -REVIEW OF MEDICAL LITERATURE REGARDING LAND APPLICATION
                 12/79 -COMPLETE PILOT EVALUATION OF SLUDGE DISTRIBUTION
                 02/80 -DETERMINE SAFETY OF COMPOSTING
  PROGRAM ID...: (PE-607 )          HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
  FINAL OUTPUT.: DETERMINE SAFETY OF COMPOSTING
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
                 10-05     RESOURCE CONSERVATION AND RECOVERY ACT
  ORDIS CODES..: RECN-001083          SSIE-GMA  5400 1       EPA -R805445-01       TASK-D607A-013C
                 ORD -RD10B30-1079    LABN-D611E-002         MAND-10-01            LABT-OHR
                 MAND-10-05           PE  -607

  PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH      DATA-UPDATED          UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
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ABSTRACT.....: THIS THREE PART STUDY IS INTENDED TO BE THE FIRST PHASE OF A LONG-TERM EFFORT TO PREPARE GUIDELINES TO MINIMIZE THE HEALTH EFFECTS FROM THE LAND APPLICATION OF MUNICIPAL WASTEWATER AND SLUDGES AND FROM OTHER TREATMENT PROCESSES. POPULATION GROUPS TO BE CONSIDERED ARE THOSE OCCUPATIONALLY EXPOSED TO ALL ASPECTS OF THE WASTE-HANDLING OPERATIONS, THOSE EXPOSED BY WAY OF THEIR LIVING, WORKING OR HAVING RECREATIONAL PURSUITS NEARBY AND THOSE WHO CONSUME OR OTHERWISE COME INTO CONTACT WITH ANY CROPS OR OTHER PRODUCTS OF THE TREATMENT SYSTEM. THE FIRST PART CONSISTS OF AN EVALUATION OF CURRENT INFORMATION ON THE HEALTH RISKS UTILIZING EXISTING REVIEWS AND ASSESSMENTS AS WELL AS SUPPLEMENTAL LITERATURE SEARCH. THIS EVALUATION WILL ALSO RESULT IN DETAILED PLANS FOR ADDITIONAL STUDIES THAT ARE NEEDED. A PILOT STUDY OF WORKERS EXPOSED TO HEAT DRIED MUNICIPAL SEWAGE SLUDGE THAT IS ULTIMATELY APPLIED TO THE LAND COMPRISES THE SECOND PART OF THE PROJECT. INCLUDED IN THE PILOT STUDY IS A DETERMINATION OF THE CHEMICAL AND BIOLOGICAL PROPERTIES OF THE SLUDGE AND EXAMINATION OF THE WORKERS FOR POSSIBLE EFFECTS OF THE SLUDGE CONSTITUENTS. THE THIRD PART IS A CAUSE OF DEATH STUDY OF FORMER EMPLOYEES OF A LARGE WASTEWATER TREATMENT SYSTEM TO DETERMINE IF ANY CAUSES OF DEATH OCCUR MORE FREQUENTLY THAN EXPECTED. THE RESULTS OF THIS MORTALITY STUDY WILL BE USED TO HELP DEFINE THE NEED FOR ADDITIONAL RESEARCH.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R 805456-02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Effect of Liming, Phosphate, and Organic Matter On Heavy Metal Availability To Plants Grown In Sludge-Amended Soils

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

James W. Shuford - Natural Resource & Environmental Studies - Associate Professor
Luke M. Mugwira - Natural Resource & Environmental Studies - Associate Professor

NAME AND ADDRESS OF APPLICANT INSTITUTION

Alabama A & M University
Normal, AL 35762

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Objectives:

(1) To evaluate the effects of pH, PO_4 and organic matter on metal (Zn, Cu, Cd, and Ni) uptake by plants and reversion in soils previously sludge-amended and those receiving sewage sludge for the first time.

(2) To assess the effects of pH, PO_4 and organic matter on the toxicity of metals to plants grown on soils treated with sewage sludge and soils treated with inorganic salts of these metals.

Approach:

A greenhouse study consisting of 72 treatments will be employed. Experimental pots will contain soils previously sludge treated and untreated. Soils will be adjusted to various pH levels. Sludge, inorganic salts and PO_4 rates will be added before seeding soybean glycine max (L) merr. Sludge and soil analyses will include: (1) metals, (2) pH, (3) organic matter and (4) nutrients. Plants will be harvested at maturity and analyzed for metals and nutrients concentrations.

Progress and Research Plans:

Sludge and soils have been collected and analyzed for nutrient and metal concentrations. Organic matter and pH were also determined. Treatments (pH adjustments, sludge, inorganic salts and PO_4 rates) have been added to soils. Soybean has been planted and will be harvested at maturity for nutrient and metal analyses. Multiple plantings will be made over a period of three (3) years.

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*PROJECT: 002408-ULTRASTRUCTURE AND X-RAY MICROANALYSIS OF MACROPHAGES EXPOSED TO
                 NONCRITERIA POLLUTANTS WITH EMPHASIS ON CERTAIN METAL COMPOU
                      STARTING/ COMPLETION DATE : 10/76 - 10/79 :   FY78
                      TASK CODE=H601D-7316   **EPA=R805460    ** (GRANT)
  EPA  OFFICER.: MD WATERS                EPA/HERL - RTP
  INVESTIGATOR.: JD SHELBURNE             DUKE UNIV                      SCH OF ME/PHARM DEPT
  MILESTONES...: 12/77 -TEM OF RAMS EXPOSED TO CD AND V
                 12/77 -MICROPROBE ANALYSIS OF ABOVE
                 01/78 -ULTRACRYOMICROTOMY-PRELIM. STUDIES WITH SORVALL
                 01/78 -FLY ASH MAPPING
                 01/78 -FREEZE DRYING & EPOX EMBEDDING OF RAMS
                 03/78 -TEM & MICROPROBE OF ABOVE
                 06/78 -ULTRACRYOMICROTONY-LKB TECHNIQUE
                 10/78 -COMPLETION OF TECHNIQUE EVALUATIONS
  PROGRAM ID...: (PE-601 )          HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
  MANDATE......: 10-02      CLEAN AIR ACT
                 30-99      CELLULAR PATHOLOGY
  CURR. RESULTS: TECHNIQUES ESTABLISHED FOR CULTIVATION OF MACROPHAGES
                 ON STRIPS OF ALUMINUM OR GOLD FOIL WITH SUBSEQUENT
                 EMBEDDING OF ONE SIDE OF FOIL IN EPON.
  ORDIS CODES..: RECN-002408        SSIE-GMA  4317 1     EPA -R805460        TASK-H601D-7316
                 ORD -RH10B30-5078  LABN-H601E-8316      MAND-10-02
                 MAND-30-99         PE  -601                                 LABT-OHR

  PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH    DATA-UPDATED        UPDATED-  OCT-DEC 77
                                    ACCESS-PUBLIC
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ABSTRACT.....: A CRITICAL PROBLEM IN CORRELATING THE RESULTS OF CHEMICAL ANALYSES AND BIOLOGICAL SCREENING TESTS WITH RESPECT TO THE POTENTIAL BIOHAZARDS OF A GIVEN CRUDE SAMPLE IS THE DEGREE TO WHICH THE BIOLOGICAL AVAILABILITY OF THE SAMPLE IS UNDERSTOOD. THAT IS, WE NEED TO KNOW THE NATURE OF SURFACE CHEMISTRY AND THE POTENTIAL OF A COMPLEX SAMPLE TO RELEASE COMPONENTS TO BIOLOGICAL FLUIDS AND TISSUES. THE OBJECTIVE OF THIS CONTRACT IS TO EXPOSE RABBIT ALVEOLAR MACROPHAGES (RAMS) IN VITRO TO A VARIETY OF ELEMENTS (SPECIFICALLY CADMIUM, VANADIUM, NICKEL, MANGANESE, CHROMIUM, IRON, LEAD, COPPER AND ZINC) AT DIFFERING CONCENTRATIONS AND TIMES, AND TO A VARIETY OF PARTICLES (BOTH FLY-ASH PARTICLES COATED WITH KNOWN ELEMENTS AND REPRESENTATIVE ELEMENTS SELECTED FROM URBAN AIR) IN ORDER TO DEFINE MORPHOLOGICALLY THE SUBCELLULAR REACTION OF THESE MACROPHAGES TO INJURY. ELECTRON PROBE MICROANALYSIS IS BEING USED TO STUDY THE MORPHOLOGY AND DISTRIBUTION OF THE TOXIC ELEMENTS IN QUESTION. CONSEQUENTLY A PARALLEL AND IMPORTANT OBJECTIVE OF THIS WORK IS TO EXAMINE IN DETAIL THE LIMITATIONS AND USEFULNESS OF A NUMBER OF MICROHISTOLOGICAL TECHNIQUES FROM A QUALITATIVE AND SEMI-QUANTITATIVE POINT OF VIEW IN ORDER TO OPTIMIZE TECHNIQUES FOR THE IDENTIFICATION, LOCALIZATION AND DISTRIBUTION OF THESE ELEMENTS. TECHNIQUES HAVE BEEN ESTABLISHED FOR THE CULTIVATION OF MACROPHAGES ON STRIPS OF ALUMINUM OR GOLD FOIL WITH SUBSEQUENT EMBEDDING OF ONE SIDE OF THE FOIL IN EPON. EXCELLENT THIN SECTIONS HAVE BEEN OBTAINED WITHOUT INTERFERRING METAL. SNAP FREEZING IN LIQUID PROPANE HAS EFFECTIVELY AVOIDED METAL TRANSLOCATION AND HAS MADE IT POSSIBLE TO DETECT AND QUANTITATE METALS WITHIN CELLULAR ORGANELLES OF MACROPHAGES. THE TECHNIQUES WILL NOW BE APPLIED TO CELLS EXPOSED TO METAL CONTAINING PARTICULATE MATERIALS.

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*PROJECT: 000042-AN OPTIMIZATION OF THE LLE METHOD FOR THE ANALYSIS OF VOLATILE HALIDES
                 IN DRINKING WATER
                    STARTING/ COMPLETION DATE : 11/77 - 11/79 :   FY79
                    TASK CODE=A614D-01     **EPA=R805472-02  ** (GRANT)
  EPA  OFFICER.: T  BELLER                  EPA/EMSL - CINC                513-684-7311
  INVESTIGATOR.: WH GLAZE                   NORTH TEXAS STATE UNIV         INST OF APPLIED SCI
                 DR SCOTT                   NORTH TEXAS STATE UNIV         INST OF APPLIED SCI
  MILESTONES...: 11/79 -METHOD FOR THE ANALYSIS OF ORGANOHALIDES CONT. IN FINISHED WATER
  PROGRAM ID...: (PE-614 )           PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
  FINAL OUTPUT.: METHOD FOR ANALYSIS OF ORGANOHALIDES CONTAINED
                 IN FINISHED WATER.
  MANDATE......: 10-99     DRINKING WATER REGULATIONS
  CURR. RESULTS: ALL METHOD PARAMETERS OPTIMIZED.
  ORDIS CODES..: RECN-000042         SSIE-GMA  4708 2      EPA -R805472-02       TASK-A614D-01
                 ORD -RA10830-1079   MAND-10-99            PE  -614
                                     LABT-MTS

  PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: TO DEVELOP, OPTIMIZE AND TEST A SIMPLE LIQUID/LIQUID EXTRACTION TECHNIQUE FOR THE ANALYSIS OF VOLATILE ORGANOHALIDES CONTAINED IN DRINKING WATER AT THE MICROGRAM PER LITER LEVEL. APPROACH: EACH PARAMETER OF THE METHOD IS BEING STUDIED TO FIND HOW SLIGHT VARIATIONS AFFECT THE ACCURACY AND PRECISION OF THE METHOD. ACTUAL WATER SAMPLES ARE ALSO BEING ANALYZED TO DETERMINE THE ACCURACY AND PRECISION OF THE OPTIMIZED METHOD. RESULTS TO DATE: ALL OF THE METHOD PARAMETERS HAVE BEEN OPTIMIZED.

*PROJECT: 005060-CHEMICAL STUDIES DIRECTED TOWARDS ECOLOGICAL DAMAGE ASSESSMENT OF PETROLEUM DISCHARGES INTO THE MARINE ENVIRONMENT
STARTING/ COMPLETION DATE : 09/77 - 09/80 : FY79
TASK CODE=P608C-11 **EPA=R805477 ** (GRANT)

EPA OFFICER.: J LAKE — EPA/ERL - NARR
INVESTIGATOR.: JG QUINN — UNIV OF RHODE ISLAND — SCH OF OCEANOGRAPHY
EJ HOFFMAN — UNIV OF RHODE ISLAND — SCH OF OCEANOGRAPHY
MILESTONES...: 09/80 -FINAL PROJECT REPORT
PROGRAM ID...: (PE-608) ECOLOGICAL PROCESSES AND EFFECTS
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-10 AA FOR WATER AND HAZARDOUS MATERIALS
ORDIS CODES..: RECN-005060 SSIE-GMA 6070 EPA -R805477 TASK-P608C-11
ORD -RP10831-5079 MAND-10-01 MAND-20-10
PE -608 LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

COMMENT......: PL 92-500
PL 93-523

ABSTRACT.....: OBJECTIVES: TO CONDUCT ANALYTICAL CHEMICAL STUDIES IN SUPPORT OF ECOLOGICAL DAMAGE ASSESSMENT OF ACUTE AND CHRONIC DISCHARGES OF PETROLEUM INTO THE NEAR-SHORE MARINE ENVIRONMENT. THESE STUDIES WILL INCLUDE THE FOLLOWING: (1) CHEMICAL ANALYSES OF PETROLEUM COMPOUNDS IN SELECTED SAMPLES OF WATER, SEDIMENTS AND ORGANISMS USING A VARIETY OF ANALYTICAL PROCEDURES (E.G. COLUMN, THIN-LAYER AND GAS CHROMATOGRAPHY; INFRARED SPECTROSCOPY; AND COMBINED GAS CHROMATOGRAPHY-MASS SPECTROMETRY). (2) DEVELOPMENT OF NEW METHODS AND MODIFICATION OF EXISTING PROCEDURES IN SUPPORT OF TOXICOLOGICAL AND FIELD STUDIES. (3) PARTICIPATION WITH OTHER LABORATORIES IN THE DEVELOPMENT AND INTERCALIBRATION OF STANDARD REFERENCE MATERIALS AND METHODS FOR PETROLEUM ANALYSIS. APPROACH AND CURRENT PLANS: SAMPLES WILL BE COLLECTED FROM SELECTED SPILLS OF OPPORTUNITY AND SITES OF CHRONIC OIL DISCHARGES. THE BASIC ANALYSES OF THESE SAMPLES WILL INVOLVE EXTRACTION, ISOLATION OF PETROLEUM COMPOUNDS BY COLUMN AND/OR THIN-LAYER CHROMATOGRAPHY, AND ANALYSIS BY GAS CHROMATOGRAPHY USING PACKED METAL COLUMNS AND GLASS CAPILLARY COLUMNS. SELECTED SAMPLE EXTRACTS WILL ALSO BE ANALYZED BY INFRARED SPECTROSCOPY, AND COMBINED GAS CHROMATOGRAPHY-MASS SPECTROMETRY. IN COMBINATION WITH FIELD EVALUATION AND LABORATORY TOXICOLOGICAL INVESTIGATIONS, THE PROPOSED RESEARCH WILL ALLOW A HIGHLY INTEGRATED, MULTIDISCIPLINARY STUDY OF THE FATE AND EFFECTS OF OIL ON THE MARINE ECOSYSTEM.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R 805569 02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Impact Assessment of Energy Conversion Facilities in the Ohio River Basin: Phase II.

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Hugh T. Spencer, Sc.D., Associate Professor in the Dept. of Chemical & Environmental Engineering, Speed Scientific School - Principal Investigator.

Clara Leuthart, Ph.D., Assistant Professor of Liberal Studies, University College - Support Researcher.

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Louisville Foundation, Inc.
2301 South Third Street, Louisville, KY 40208

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data)*. In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

1. Objectives: The Ohio River Basin Energy Study (ORBES) was initiated to assess changes that may occur in the various sectors of society, industry, and environment as a result of future increases in number of energy conversion facilities. During the second year of this study each participating research group will address itself to one of the areas thought to be affected. The group from the University of Louisville will address aspects of water quality, water quantity, and special aquatic habitats.

2. Approach: The assessments will be made by compilation and analysis of existing data possibly supported by Special Studies of specific areas where existing data is weak or lacking.

3. Current Plans and/or Progress: Participants from nine midwestern universities divided into three assessment teams have submitted independent preliminary first cut assessments of the changes which may occur as a result of these developments. These assessments will be condensed into one major document which is to be submitted to Congress in December 1979.

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*PROJECT: 005045-SEASONAL CYCLES IN BODY COMPOSITION, ORGAN SYSTEM FUNCTION AND
                 ENERGETICS OF GRASSLAND BIRDS NEAR COLSTRIP, MONTANA
                     STARTING/ COMPLETION DATE : 10/77 - 09/79 :   FY79
                     TASK CODE=M625A-036     **EPA=R805581-02  ** (GRANT)
  EPA  OFFICER.: EM PRESTON             EPA/ERL - CORVALLIS                503-757-4636
  INVESTIGATOR.: ML MORTON              OCCIDENTAL COLLEGE                 DEPT OF BIOL
  MILESTONES...: 09/79 -FINAL REPORT
  PROGRAM ID...: (PE-625 )          HEALTH AND ECOLOGICAL EFFECTS
  FINAL OUTPUT.: REPORT TO DEV. CAPACITY TO PREDICT ECOL. IMPACT OF
                 PLANT EMISSIONS BEFORE DAMAGE.
  MANDATE......: 10-99     ENERGY REORG. ACT.
  ORDIS CODES..: RECN-005045          SSIE-GMA  6082       EPA -R805581-02       TASK-M625A-036
                 ORD -RM10C30-1079    MAND-10-99           PE  -625
                                      LABT-EPE

  PROJ STATUS..: PROJECT-COMPLETED    CATEGORY-RESEARCH    DATA-ORIGINAL         UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
  ABSTRACT.....: OBJECTIVE: MEASURE AND PREDICT CHANGES IN POPULATION STRUCTURE AND DYNAMICS OF SELECTED SPECIES OF
                  BIRDS AS A FUNCTION OF ENDOGENOUS CYCLES, EXOGENOUS CYCLES, OR ENVIRONMENTAL FACTORS INCLUDING
                  RELEVANT BIOTIC INTERACTIONS AND PHYSICAL FACTORS SUCH AS AIR POLLUTION. FINAL OUTPUT: REPORT THAT
                  DEVELOPS THE CAPACITY TO PREDICT THE ECOLOGICAL IMPACTS OF COAL-FIRED POWER PLANT EMISSIONS BEFORE
                  DAMAGE OCCURS.

*PROJECT: 003613-INVESTIGATION OF THE BIOENVIRONMENTAL IMPACT OF FOSSIL FUEL-FIRED PLANTS
                  IN THE FORT UNION BASIN
                     STARTING/ COMPLETION DATE : 10/77 - 09/80 :   FY79
                     TASK CODE=M831 -007     **EPA=R805610-01  ** (GRANT)
  EPA  OFFICER.: EM PRESTON             EPA/ERL - CORVALLIS                503-757-4636
  INVESTIGATOR.: CC GORDON              UNIV OF MONTANA                    ARTS & SCI/BOTANY DEPT
  MILESTONES...: 09/80 -FINAL REPORT
  PROGRAM ID...: (PE-831 )          TRANS,FATE, AND EFFECTS OF ENERGY REL POLLUTANTS
  FINAL OUTPUT.: REPORT THAT HELPS DEV. CAPACITY TO PREDICT ECOLOGIC
                 IMPACTS BEFORE DAMAGE OCCURS.
  MANDATE......: 10-99     ENERGY REORG. ACT.
  ORDIS CODES..: RECN-003613          SSIE-GMA  5202 1     EPA -R805610-01       TASK-M831 -007
                 ORD -RM10B30-1079    LABN-M625A-212       MAND-10-99
                 PE  -831                                  LABT-EPE

  PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH    DATA-UPDATED          UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
  ABSTRACT.....: OBJECTIVE: WITHIN A ZONAL AIR POLLUTION RESEARCH SITE, DETERMINE THE EFFECTS OF SULPHUR AND FLUORIDE
                  ON SELECTED PLANTS, ANIMALS AND INSECTS. FINAL OUTPUT: REPORT THAT HELPS DEVELOP THE CAPACITY TO
                  PREDICT THE ECOLOGICAL IMPACTS OF COAL-FIRED POWER PLANT EMISSIONS BEFORE DAMAGE OCCURS.
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U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R805585 02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Ohio River Basin Energy Study

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Vincent P. Cardi	Professor of Law, Principal Investigator
Walter P. Page	Professor of Economics

NAME AND ADDRESS OF APPLICANT INSTITUTION

State of West Virginia by the West Virginia Board of Regents
on behalf of West Virginia University
Morgantown, WV 26506

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

This proposal is part of a series of institutional grants which comprise the Ohio River Basin Energy Study, Phase II, Year II. The broad objectives of this study are to engage in a comprehensive policy oriented technology assessment that addresses the environmental, public health, economic, institutional, and social effects of locating various combinations of energy conversion and related support facilities in the Ohio River Region.

Phase II of this study is being carried out by an interdisciplinary group of researchers from various universities. This application sets forth the participation of researchers from West Virginia University representing the disciplines of law and economics.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R 805587 02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Ohio River Basin Energy Study, Phase II: Illinois Core Team Participation

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

J.J. Stukel, Dir., Off. of Energy Research, Univ. of Ill. at Urbana-Champaign (PI)
G.L. Fowler, Assoc. Prof., Dept of Geography, Univ. of Ill. at Chicago Circle (Co-PI)
J.P. Hartnett, Dir., Energy Resources Center, Univ. of Ill. at Chicago Circle (Co-PI)
B.R. Keenan, Prof., Dept. of Political Science, Univ. of Ill. at Chicago Circle (Co-PI)

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Illinois
Urbana, IL 61801

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The Ohio River Basin Energy Study (ORBES) is an integrated policy-oriented technology assessment that addresses the potential social, economic, and environmental consequences of a variety of plausible regional energy futures. Phase I of ORBES, conducted in 1976-77, was a preliminary assessment of the potential impacts of four energy development scenarios for the lower Ohio River valley. Phase II, which began in 1977 and will continue through 1979, represents an in-depth assessment based on the issues identified during Phase I. During Phase II the study region has been expanded to include parts or all of the six states bordering the Ohio River: Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia. The principal focus during the second year of Phase II will be impact and policy analysis through scenario iterations.

Phase II of ORBES is being conducted by a Core Team of thirteen researchers, representing a variety of disciplines, from nine university campuses in the Phase II study region. The principal contribution of researchers from the University of Illinois will be in the areas of energy conversion technology, energy policy, air pollution abatement equipment, air pollutant transport, energy facility siting patterns, demography, and political and institutional dynamics.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved OMB No. 158-R0081

PROJECT NO.(Do not use this space)

SSIE

EPA R805589 02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Phase II, Ohio River Basin Energy Study

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. Steven I. Gordon
Assistant Professor
City and Regional Planning
The Ohio State University

Anna S. Graham
Research Associate - Social I
City and Regional Planning
The Ohio STate University

NAME AND ADDRESS OF APPLICANT INSTITUTION

The Ohio State University Research Foundation
1314 Kinnear Road
Columbus, Ohio 43212

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

This project is the second phase of a technology assessment of energy development in the Ohio River Basin. A core team composed of members from nine different university campuses in six states will direct and delineate research activities in this phase of the program. First, reports from Phase I of the project will be reviewed and key issues for further research identified. The baseline data for the study will be refined and a new set of energy facility siting criteria developed. The core team will then review basic technological, sociological, and demographic assumptions and create a set of energy development scenarios relative to coal mining, transportation, and conversion facilities, and to other types of energy facilities in the study region.

Given these scenarios the impacts of the energy facilities on the physical environment, socio-economic conditions, ecological factors, public health, institutions, land use, and the quality of life will be assessed. The Phase II impact analysis will emphasize the tracing of second and higher-order impacts and the interrelationships among them. Based upon the impact assessment, a range of possible options under each scenario will be determined.

The primary roles of Dr. Gordon will be to assist in the analysis of social and economic impacts of alternative policies, to continue to lead the overall impact assessment, and to help to integrate the impact analysis into a comprehensive report.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

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Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

EPA R 805590 02

TITLE OF PROJECT

Ohio River Basin Study PHASE 2; Year 2

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Donald Blome, Ph.D., Project Director
Institute for Mining and Mineral Research

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Kentucky Research Foundation
Kinkead Hall, East Wing
Lexington, Kentucky 40506

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of the ORBES project is to conduct an Integrated Technology Assessment of energy conversion facilities in the Ohio River Basin Region. The past year has seen over one hundred researchers at eight campuses in the Region collecting and analyzing baseline data in relevant areas in order to conduct a first-cut or "mini"-assessment. The second year of the project (Phase II) is to be devoted to identifying, requesting and supervising research in areas deemed inadequately covered in the first year. The project has been reconstructed so that there is a Core Team of thirteen researchers from ten institutions (the ORBES region has been expanded to include West Virginia and Western Pennsylvania in addition to last year's Ohio, Indiana, Illinois and Kentucky areas) who will perform the Integrated Technology Assessment. The Core Team represents a variety of relevant disciplines capable of taking on the assessment task.

The University of Kentucky's two Core Team members represent the disciplines of sociology and economic geography. In addition, the anthropologist is helping conduct the social impact assessment of increased power production in the ORBES area. Contributions to be expected include a study of the impact of service areas on electric power generation and transmission and further refinement of the social impact assessment analysis. The latter study includes an operationalization of an environmental orientation paradigm, preparation of demographic profiles of counties by environmental orientation and an impact assessment. This work will be used cooperatively and integratively by the Core Team to perform the Technology Assessment.

SEP 11 1978

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R 805603 02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Ohio River Basin Energy Study - Phase II

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Robert E. Bailey, Director, The Ohio State University Program for Energy Research, Education and Public Service

NAME AND ADDRESS OF APPLICANT INSTITUTION

Oxley Hall Room 111
1712 Neil Avenue
Columbus, Ohio 43210

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The overall purposes of the Ohio River Basin Energy Study (ORBES) are (1) to identify and evaluate the potential consequences of various levels, rates, and patterns of future energy development in the Ohio River Basin, (2) to formulate policy alternatives that could mitigate the undesirable consequences or reinforce the desirable consequences, and (3) to summarize this information and present the results in a usable final report and in public meetings throughout the ORBES region.

Thus ORBES is an interdisciplinary, policy-oriented technology assessment that seeks to inform the public, industry, and all levels of government about the probable environmental, public health, economic, institutional, and social consequences of locating various combinations of new energy conversion and related support facilities in the Ohio River region.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

EPA R 805608 02

TITLE OF PROJECT

Ohio River Basin Energy Survey (ORBES), Phase II, Year 2

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

M.A. Shapiro, Dept. IEHS, Professor Environmental Health Engineering
G.P. Kay, Dept. IEHS, Environmental Research Scientist
A.A. Sooky, Dept. IEHS, Assoc. Research Professor
J.L. Sykora, Dept. IEHS, Assoc. Research Professor
J.B. Andelman, Dept. IEHS, Professor Water Chemistry

NAME AND ADDRESS OF APPLICANT INSTITUTION

Dept. Industrial Environmental Health Sciences, Graduate School of Public Health, University of Pittsburgh Pittsburgh, PA 15261

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objectives of this proposal is to develop an information and data base for the detailed consideration of potential impacts of future energy requirements and conversion activities in the Ohio River Basin. Phase I includes: demography, energy use by source and by sector; electricity exported and imported; energy reserves, electrical generation capability by facility and fuel type; plant ownership; and social and economic data on region residents. In Phase II the baseline data will be completed by additional information on migration, land use projections, induced industry, public health, water and air quality, coal mining, social services, recreational facilities and economics.

The approach will include: 1. collection of available baseline data; 2. Extensive literature search; 3. Data and information analysis; 4. Participation in Core Team and public meetings. The results will be compiled into a complete and comprehensive documents.

Current plans include collection and evaluation of baseline data identical to those already obtained for Illinois, Indiana, Kentucky and Ohio and parallel to those to be obtained by all states involved. This includes also participation on Development of Phase II Work Plan, Energy Conversion Configurations, Impact assessment and Definition of Policy Options.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. (Do not use this space)

SSIE

EPA R805609 02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

OHIO RIVER BASIN ENERGY STUDY, PHASE II CONTINUATION

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Professor J.C. Randolph
School of Public and Environmental Affairs

NAME AND ADDRESS OF APPLICANT INSTITUTION

Indiana University Foundation, Research and Sponsored Programs
355 North Lansing Street
Indianapolis, Indiana 46202

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data) In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

This set of studies represents a portion of a multi-institutional policy-oriented technology assessment of the socioeconomic and environmental impacts which might result from a proposed increased concentration of energy conversion facilities within the Ohio River Basin.

Utilizing the best available data bases, these studies will attempt to address the broad-scale environmental, institutional, economic and social effects of various future combinations of energy conversion facilities (i.e., coal-based plants producing synthetic fuels, as well as nuclear and coal-fired electric power generating plants) and their required support facilities (i.e., coal mining, processing and transportation; ash and sludge disposal facilities; nuclear fuel and reactor waste transportation facilities; and energy transportation systems, including electric power transmission systems) that might be built and operated in this region in the future.

The principal objectives of this assessment are (1) to assist in outlining the full range of policy options for dealing with selected kinds of development, alternative levels of development and their possible undesirable effects, and alternative technological levels of environmental controls; and (2) to analyze the probable impacts that would result from implementing each option in its total framework, with special emphasis on the natural environment and its inter-relationship with public health and welfare. The full range of primary, secondary, and higher order effects will be considered.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO.(Do not use this space)

SSIE 2

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

EPA R805610-03

TITLE OF PROJECT Investigation of the Bioenvironmental Impact of Fossil Fuel-Fired Power Plants in the Fort Union Basin

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

C. C. Gordon, Principal Investigator, Professor of Botany
P. C. Tourangeau, Director of Environmental Studies Laboratory
P. M. Rice, Director of Environmental Studies Field Laboratory
J. J. Bromenshenk, Entomologist/Ecologist

NAME AND ADDRESS OF APPLICANT INSTITUTION
Department of Botany
University of Montana
Missoula, Montana 59812

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

This continuation proposal is to allow completion of 1979 field investigations which are an integral part of the EPA Coal-Fired Power Plant Project (CFPPP) at Colstrip, and to allow production of appropriate portions of the project's six-year Termination Products by December 31, 1980. Products include: (1) Fifth and Sixth Interim Reports--summarizing results of the 1978 and 1979 field season case studies of ecological effects of coal-fired power plants at Colstrip, Montana, and incorporating these results into an overall synthesis for CFPPP components; (2) Ecological Effects Siting Protocol--furnishing methods for evaluating (baselines, bioindicators, biomonitors, impact predictions) bioenvironmental impacts of air pollution from coal-fired power plants for use in the decision-making process for siting these facilities; and (3) Zonal Air Pollution System (ZAPS) Integrated Volume--summarizing and synthesizing key findings of sulfur dioxide (SO_2)-stressing experiments at field sites in a grassland ecosystem.

Environmental Studies work being completed encompasses: (1) Growth/health/disease parameters of foliage of ponderosa pines related to foliar levels of sulfur and fluoride and exposures to acute and chronic air pollution; (2) methods for using honey bees as monitors and reactants to several air pollutants; (3) population and behavioral responses of insects observed to respond to SO_2 and their ecological role(s); (4) direct and indirect impacts of SO_2 on selected indigenous forbs and grasses, especially seed viability, germination success and rate, sulfur accumulation in leaf and root tissues, pollen production and dispersal, pollen viability and success of dominant perennial and annual grasses; and (5) stratifications of ambient SO_2 at the ZAPS sites.

These biotests compliment physical and chemical measurements of environmental quality and are part of an attempt to develop methods to predict ecological impacts of air pollutants before damage is sustained. These methods are to be incorporated into a siting protocol for fossil-fueled power plants, with particular reference to the primary indigenous and agricultural ecosystems of the Northern Great Plains.

IDENTIFY PROFESSIONAL SCHOOL INVOLVED (Medical, dental, etc.) | SIGNATURE OF PRINCIPAL INVESTIGATOR | DATE

*PROJECT: 001116-HUMAN HEALTH EFFECTS OF SODIUM IN THE DRINKING WATER

STARTING/ COMPLETION DATE : 02/78 - 02/83 :   FY78
TASK CODE=D614B-011C   **EPA=R805612-01 ** (GRANT)

EPA OFFICER.: DG GRANTHOUSE   EPA/HERL - CINC
INVESTIGATOR.: RW TUTHILL   UNIV OF MASSACHUSETTS   PUB HLTH DIV
EJ CALABRESE   UNIV OF MASSACHUSETTS   PUB HLTH DIV
MILESTONES...: 12/78 -COMPLETION OF STUDY OF EFFECTS IN SECOND GRADERS
12/79 -COMPLETION OF HIGH SCHOOL IN NEW COMMUNITIES
12/79 -BOTTLE WATER STUDY COMPLETED
12/81 -COMPLETION OF PRE- AND POST-CHANGE OVER STUDY
12/82 -COMP. OF HOSP. STUDY OF INCIDENCE OF CIRCUL. SYSTEM/KIDNEY DISEASES
PROGRAM ID...: (PE-614)   PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
MANDATE.......: 10-13   SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001116   SSIE-GMA 5387   EPA -R805612-01   TASK-D614B-011C
ORD -RD10B30-1078   MAND-10-13   PE -614
LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE   CATEGORY-RESEARCH   DATA-ORIGINAL   UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT......: A PRIOR STUDY BY THE INVESTIGATORS COMPARING 300 HIGH SCHOOL SOPHOMORES IN A HIGH SODIUM (108 PPM) WITH THOSE IN A LOW SODIUM (8 PPM) DRINKING WATER COMMUNITY INDICATED A MEDICALLY AND STATISTICALLY SIGNIFICANT UPSHIFT IN THE POPULATION BLOOD PRESSURE (B.P.) DISTRIBUTION IN BOTH MALES AND FEMALES FOR BOTH SYSTOLIC AND DIASTOLIC B.P.'S. A SUBSEQUENT ANALYSIS OF HOME FIRST MORNING TAP WATER SAMPLES FOR NINE HEAVY METALS POTENTIALLY RELATED TO CIRCULATORY SYSTEM DISEASE IS CURRENTLY UNDERWAY ALONG WITH AN ANALYSIS OF THE CIRCULATORY SYSTEM MORTALITY EXPERIENCE OF THE TWO COMMUNITIES OVER THE PAST DECADE. THE PHASED RESEARCH PROGRAM BEING PROPOSED FOR THIS GRANT IS DESIGNED TO PROVIDE FURTHER HUMAN POPULATION DATA ON THE HEALTH EFFECTS OF SODIUM IN THE DRINKING WATER. THE SPECIFIC STUDIES ARE: A REPLICATION OF THE ORIGINAL STUDY IN A SECOND GRADE POPULATION; REPLICATION IN TWO DIFFERENT WATCHED COMMUNITIES WITH ONLY HALF THE DIFFERENCE IN SODIUM LEVELS; A BOTTLED WATER STUDY TO DIFFERENTIATE THE SODIUM EFFECT ON B.P. DISTRIBUTION FROM OTHER WATER FACTORS; A BEFORE AND AFTER COMMUNITY CHANGEOVER TO LOW SODIUM WATER STUDY OF B.P. DISTRIBUTIONS OF SIXTH GRADERS AND EARLY MIDDLE-AGED ADULTS; A BEFORE AND AFTER STUDY OF HOSPITALIZED INCIDENCE OF CIRCULATORY SYSTEM MORBIDITY.

*PROJECT: 003984-IDENTIFICATION OF TOXIC POLLUTANT DISCHARGES FOR UNIT PROCESSES

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                 STARTING/ COMPLETION DATE : 10/77 - 01/81 :   FY78
                 TASK CODE=V610 -01     **EPA=R805620    ** (GRANT)
EPA  OFFICER.: PE DESROSIERS              EPA/OEET- DAA
INVESTIGATOR.: JA KING                    MITRE CORP
               E  HERRICK                 MITRE CORP
MILESTONES...: 02/78 -TOXIC POLLUTANT ID.: TRIFLURALIN MANUFACTURING 02/78-01
               02/78 -TOXIC POLLUTANT ID.: ATRAZINE MANUFACTURING 02/78-02
               02/78 -TOXIC POLLUTANT ID.: ACRYLONITRILE MANUFACTURING 02/78-03
               11/78 -TOXIC POLLUTANT ID.: NITROBENZENE/ANILINE MANUFACTURING
               11/78 -TOXIC POLLUTANT ID.: AMINATION PROCESSES
               02/79 -TOXIC POLLUTANT ID.: ALKYL AND ALKYNOL AMINES MFG.
PROGRAM ID...: (PE-610 )          MINERALS PROCESSING AND MANUFACTURING INDUSTRIES
MANDATE......: 20-30     AA FOR TOXIC SUBSTANCES
ORDIS CODES..: RECN-003984        SSIE-GMA  4865 1     EPA -R805620        TASK-V610 -01
               ORD -RV10B30-2078  LABN-V604 -02        MAND-20-30
               PE  -610                                LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH    DATA-UPDATED        UPDATED-  OCT-DEC 77
                                  ACCESS-PUBLIC
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ABSTRACT.....: CHARACTERIZATION OF TOXIC DISCHARGES AND FEEDSTOCK, INTERMEDIATE, AND PRODUCT CONTAMINANTS FOR REPRESENTATIVE CHEMICAL MANUFACTURING OPERATIONS WHICH UTILIZE THE MAJOR UNIT PROCESSES, AND ASSESSMENT OF NEW CONTROL TECHNOLOGIES AND IN-PLANT MODIFICATIONS TO OBVIATE THEIR DISCHARGE.

*PROJECT: 001725-METEOROLOGICAL ANALYSIS FOR THE APPLICATION OF RAPS AQSMS

STARTING/ COMPLETION DATE : 11/77 - 09/79 : FY79
TASK CODE=G603A-AB045 **EPA=R805640 ** (GRANT)

EPA OFFICER.:	FS BINKOWSKI	EPA/ESRL - RTP	919-541-4524
INVESTIGATOR.:	HA PANOFSKY	PENNSYLVANIA STATE UNIV	EARTH & MINERAL SCI/METEOR DEPT
	TN CARLSON	PENNSYLVANIA STATE UNIV	EARTH & MINERAL SCI/METEOR DEPT
	JD LEE	PENNSYLVANIA STATE UNIV	EARTH & MINERAL SCI/METEOR DEPT

MILESTONES...: 09/79 -ORD FINAL REPORT ON URBAN AIR QUALITY MODEL
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
MANDATE......: 10-02 CLEAN AIR ACT

ORDIS CODES..:	RECN-001725	SSIE-GMA 5174 1	EPA -R805640	TASK-G603A-AB045
	ORD -RG10B30-1079	MAND-10-02	PE -603	
		LABT-EPE		

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: THIS PROPOSAL CONSISTS OF 3 PARTS; ALL ARE AIMED AT AIR QUALITY MODELING DEALING WITH URBAN PROBLEMS AND ARE TO BE VERIFIED WITH OBSERVATIONS OF T-6 ST. LOUIS EXPERIMENT (RAPS). IN PART I, A SIMPLE VERTICAL 2-DIMENSIONAL ATMOSPHERE MODEL WILL BE APPLIED AND TESTED USING VARIOUS FORMULATIONS OF HEAT FLUX AND MIXING COEFFICIENTS IN THE BOUNDARY LAYER. PART II WILL CONCENTRATE ON THE DEVELOPMENT OF THE PROPER LOWER BOUNDARY CONDITIONS IN URBAN SITUATIONS, PARTICULARLY ST. LOUIS AND LOS ANGELES. A NEW METHOD WILL BE TESTED FOR DERIVING THE CORRECT GROUND PARAMETERS NECESSARY TO YIELD THE PROPER SURFACE ENERGY BALANCE USING SATELLITE INFRARED MEASUREMENTS FOR THESE TWO CITIES. SURFACE HEAT FLUXES WILL BE COMPUTED AND COMPARED WITH INDEPENDENT ESTIMATES. IN PART III, THE OBSERVED DISTRIBUTION OF NOX AND PERHAPS CO WILL BE USED TO TEST AN AIR QUALITY MODEL DEVELOPED FOR LOS ANGELES, MAKING USE OF OBSERVED TEMPERATURES, MIXING DEPTHS AND HEAT FLUXES AS WELL AS ESTIMATES OF THESE QUANTITIES BY A QUASI-2D HORIZONTAL HYDRODYNAMIC MODEL.

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*PROJECT: 001719-STATISTICAL ANALYSIS IN SUPPORT OF IN-HOUSE MODELING ACTIVITIES
                 ASSOCIATED WITH RAPS
                      STARTING/ COMPLETION DATE : 03/78 - 03/79 :   FY78
                      TASK CODE=G603A-AA-51  **EPA=R805640     ** (GRANT)
 EPA  OFFICER.: J  REAGAN                 EPA/ESRL - RTP
 INVESTIGATOR.: JC TRIJONIS               TECHNOLOGY SERVICE CORP
 MILESTONES...: 09/79 -FINAL REPORT
 PROGRAM ID...: (PE-603 )           HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
 MANDATE......: 10-02     CLEAN AIR ACT
 ORDIS CODES..: RECN-001719         SSIE-GMA  4913        EPA -R805640          TASK-G603A-AA-51
                ORD -RG10B30-1078   LABN-G603A-AA-51      MAND-10-02
                PE  -603                                  LABT-EPE

 PROJ STATUS..: PROJECT-ACTIVE      CATEGORY-RESEARCH     DATA-ORIGINAL         UPDATED-  OCT-DEC 77
                                    ACCESS-PUBLIC
 ABSTRACT.....: PERFORM STATISTICAL ANALYSIS AND ASSOCIATED WORK APPLICABLE TO THE DEVELOPMENT, TESTING,
                 VERIFICATION AND EVALUATION OF AIR QUALITY SIMULATION MODELS ADAPTED FOR THE ST. LOUIS REGIONAL AIR
                 POLLUTION STUDY. DEVELOP EMPIRICAL RELATIONSHIPS BETWEEN THE VARIOUS METEOROLOGICAL, CHEMICAL AND
                 EMISSION PARAMETERS BASED ON THE AVAILABLE RAPS DATA BASE. EXAMINATION OF THE FIVE DAYS WITH THE
                 HIGHEST POLLUTANT CONCENTRATION SHALL BE MADE TO DETERMINE THEIR APPLICABILITY FOR MODELING.
                 TEMPORAL PATTERNS, SPECIE TO SPECIE RELATIONS AND STATION TO STATION CORRELATIONS WILL BE EXAMINED.
                 SUBSETS OF THE DATA WILL BE PREDICTED FROM THE REMAINDER TO COMPARE ACTUAL DIFFERENCES. SPECIAL
                 STUDIES OF STATISTICAL OUTLIER TECHNIQUES FOR DATA FLAGGING, AIR QUALITY TO METEOROLOGY
                 RELATIONSHIPS AS STUDIED IN ST. LOUIS AND VISIBILITY/POLLUTANT MODELS WILL BE CONDUCTED.
                 COMPILATION OF THE REQUISITE DATA BASE CONSTITUTES THE FIRST MAJOR EFFORT.


*PROJECT: 003576-ALASKA VILLAGE RESEARCH PROJECT - WAINWRIGHT

                      STARTING/ COMPLETION DATE : 10/77 - 10/78 :   FY78
                      TASK CODE=M611B-41     **EPA=R805661-01  ** (GRANT)
 EPA  OFFICER.: MA MITCHELL               EPA/ERL - CORVALLIS
 INVESTIGATOR.: D  BODFISH                WAINWRIGHT CITY GOVT
 MILESTONES...: 10/78 -FINAL REPORT
 PROGRAM ID...: (PE-611 )          WASTE MANAGEMENT
 FINAL OUTPUT.: REPORT EVAL ELIM. OR CONTROL OF POLLUTION.
 MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
 ORDIS CODES..: RECN-003576         SSIE-GMA  4222 1      EPA -R805661-01       TASK-M611B-41
                ORD -RM10B51-1078   LABN-M611D-041        MAND-10-01
                PE  -611                                  LABT-EPE

 PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  OCT-DEC 77
                                    ACCESS-PUBLIC
 COMMENT......: 1BC611-$296000; XH1627-$113000; 1RX103-$240000
                1DC618-$4000
 ABSTRACT.....: OBJECTIVE: TO PROVIDE FOR TECHNICAL ASSISTANCE AND OPERATION AND MAINTENANCE SUPPORT TO A SMALL
                 NATIVE COMMUNITY FOR THE OPERATION OF A CENTRAL UTILITY TYPE FACILITY (INCLUDING WATER SUPPLY AND
                 WASTE TREATMENT SYSTEMS) FOR EVALUATION OF ENGINEERING PERFORMANCE AND INSTITUTIONAL MANAGEMENT.
                 FINAL OUTPUT. REPORT WHICH EVALUATES METHODS TO PROVIDE CENTRAL COMMUNITY FACILITIES FOR SAFE WATER
                 AND ELIMINATION OR CONTROL OF POLLUTION IN SMALL COMMUNITIES LACKING SUCH FACILITIES.
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U.S. ENVIRONMENTAL PR CTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R-805659-02-0

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT Development and Testing 00 Meteorological Models Suitable for Air Quality Studies.

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Richard A. Anthes
Professor of Meteorology
503 Walker Building
University Park, PA 16801

NAME AND ADDRESS OF APPLICANT INSTITUTION

The Pennsylvania State University
207 Old Main
University Park, PA 16801

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

A general meteorological model has been developed which is suitable for producing three-dimensional wind, temperature, moisture and precipitation forecasts over horizontal scales of motion ranging from tens to hundreds of kilometers. Emphasis during the next year will be testing an automated analysis and initialization scheme, verifying 24-hour forecasts of flow on a regional scale and recoding a more efficient, nested-grid version of the model. The latter project should make the model relatively easy to use on other computers.

The model is currently available for many air quality simulation and may be used on a limited basis for special projects that require high-resolution meteorological data.

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*PROJECT: 000532-GENERAL METHODOLOGY FOR EVALUATING URBAN STORMWATER QUALITY MANAGEMENT
          ALTERNATIVES
               STARTING/ COMPLETION DATE : 06/78 - 09/80 :   FY79
               TASK CODE=C822A-S1T067 **EPA=R805664     ** (GRANT)
 EPA  OFFICER.: DC AMMON                  EPA/MERL - CINC                201-321-6680
 INVESTIGATOR.: WC HUBER                  STATE UNIV SYS OF FLORIDA      ENV ENG DEPT
                JP HEANEY                 STATE UNIV SYS OF FLORIDA      ENV ENG DEPT
                EV DINIZ                                                 ESPEY HUSTON & ASSOCIATES INC.
                RP SHUBINSKI                                             WATER RESOURCES ENGINEERS CDM INC.
 MILESTONES...: 01/79 -GRANT CONTINUATION
                06/79 -PHASE I COMPLETION - UNIV. OF FL METHODOLOGY FOR MAN. ALTERN. SELEC.
                09/79 -INTERIM REPORT PUBLISHED
                06/80 -PHASE II COMPLETION - WRE AND EH&A, SUBROUTINES DOCUMENTATION
                09/80 -FINAL REPORT PUBLISHED
                09/80 -SWMM USERS MANUAL AND DOCUMENTATION
 PROGRAM ID...: (PE-822 )          POINT SOURCE TECH DEV (WASTEWATER SYS)
 FINAL OUTPUT.: SWMM USERS MANUAL AND DOCUMENTATION
 MANDATE......: 10-01      FEDERAL WATER POLLUTION CONTROL ACT
                30-99      ENVIRONMENTAL
 CURR. RESULTS: THE FOLLOWING INCORPORATED INTO SWMM LIBRARY:
                CAPABILITY FOR SIMPLIFIED ANALYSIS OF SOLIDS HANDLING
                ALTERNATIVES; GENERALIZED THEORY AND METHODOLOGY
                FOR EVALUATION OF STORAGE SYSTEMS; AND SIMPLIFIED LEVEL
                I THROUGH LEVEL III PLANNING MODELS.
 ORDIS CODES..: RECN-000532        SSIE-GMA  5094 1      EPA -R805664          TASK-C822A-S1T067
                ORD -RC10B30-5079  LABN-C611A-007        MAND-10-01
                MAND-30-99         PE  -822                                    LABT-EET

 PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE MAIN OBJECTIVE OF PHASE II IS TO EXTEND AND PERFECT THE EPA SWMM LIBRARY BY INCORPORATING WATER RESOURCES ENGINEERS' DYNAMIC WAVE ROUTING ROUTINE AND ESPEY, HUSTON AND ASSOCIATES' MODIFIED RUNOFF ROUTINES. RESULTS TO DATE: THE FOLLOWING HAVE BEEN INCORPORATED INTO THE SWMM LIBRARY: A CAPABILITY FOR SIMPLIFIED ANALYSIS OF SOLIDS HANDLING ALTERNATIVES; A GENERALIZED THEORY AND METHODOLOGY FOR EVALUATION OF STORAGE-TREATMENT SYSTEMS; AND SIMPLIFED LEVEL I THROUGH LEVEL III PLANNING MODELS.

*PROJECT: 003729-RENEWAL OF STUDIES OF OXYGEN PRODUCTION, LOSS, EXCHANGE, AND TRANSPORT RATES IN THE MERS FIELD CHANNELS
STARTING/ COMPLETION DATE : 03/78 - 12/79 : FY79
TASK CODE=N820A-0034 **EPA=R805678-01 ** (GRANT)

EPA OFFICER.: KE HOKANSON — EPA/ERL - DULUTH — 612-295-5145
INVESTIGATOR.: H STEFAN — UNIV OF MINNESOTA — DEPT OF CIV ENG
JS GULLIVER — UNIV OF MINNESOTA — DEPT OF CIV ENG
MILESTONES...: 03/78 -INITIATE FIELD WORK
09/79 -COMPLETE FIELD WORK
PROGRAM ID...: (PE-820) FRESHWATER ECO EFFECTS
MANDATE......: 30-99 ECOLOGY
CURR. RESULTS: COLLECTION OF FIELD DATA IN THERMAL AND AMBIENT CHANNELS COMPLETED IN FORM OF INTERNAL MEMO.
ORDIS CODES..: RECN-003729 — SSIE-GMA 4926 1 — EPA -R805678-01 — TASK-N820A-0034
ORD -RN10B30-3079 — LABN-N608A-103 — MAND-30-99
PE -820 — LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-BEING UPDATED — UPDATED- OCT-DEC 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: TO EVALUATE EXISTING AND DEVELOP NEW METHODS TO MEASURE PHOTOSYNTHESIS AND COMMUNITY RESPIRATION IN THE OUTDOOR EXPERIMENTAL CHANNELS. ASSUMPTIONS PREVIOUSLY MADE ARE FURTHER EVALUATED IN THE PRODUCTION AND RESPIRATION MEASUREMENTS IN AMBIENT, THERMAL AND ACIDIFIED CHANNELS. TO PROVIDE MERS A WORKING PROCEDURE TO MEASURE COMMUNITY RESPONES. APPROACH: PROCEDURES INCLUDE EMPIRICAL MEASUREMENTS FOR REAERATION COEFFICIENTS, WIND EFFECTS, CHANNEL MORPHOLOGY, LONGITUDINAL' COEFFICIENTS, COMMUNITY PHOTOSYNTHESIS RESPIRATION, AND SATURATION CONCENTRATIONS OF DISSOLVED OXYGEN.

*PROJECT: 000091-SECRETARIAT ACTIVITIES OF INTERNATIONAL STANDARDS ORGANIZATION TECHNICAL COMMITTEE 147 ON WATER QUALITY
STARTING/ COMPLETION DATE : 11/77 - 11/82 : FY79
TASK CODE=A801 -62 **EPA=R805706-02 ** (GRANT)

EPA OFFICER.: RL BOOTH EPA/EMSL - CINC 513-684-7301
INVESTIGATOR.: I RESNICK AMERICAN NATL STANDARDS
R HALKA AMERICAN NATL STANDARDS
MILESTONES...: 11/82 -INTERNATIONAL STANDARDS FOR MEASUREMENT OF WATER CHARACTERISTICS
PROGRAM ID...: (PE-801) QUALITY ASSURANCE
FINAL OUTPUT.: INTERNATIONAL STANDARDS FOR MEASUREMENT OF WATER CHARACTERISTICS.
MANDATE......: 10-15 SAFE DRINKING WATER ACT
10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-11 DAA FOR WATER PLANNING AND STANDARDS
20-13 DAA FOR DRINKING WATER
20-61 DAA FOR MONITORING AND TECHNICAL SUPPORT
CURR. RESULTS: FOURTEEN DRAFTS OF PROPOSED STANDARDS DEVELOPED AND 42 WORKING GROUPS WHICH ARE PREPARING DRAFTS OF INTERNATIONAL STANDARDS ESTABLISHED.

ORDIS CODES..:				
	RECN-000091	SSIE-GMA 4555 1	EPA -R805706-02	TASK-A801 -62
	ORD -RA10B30-5079	LABN-A621A-62	MAND-10-15	
	MAND-10-01	MAND-20-11	MAND-20-13	MAND-20-61
	PE -801		LABT-MTS	
PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: SUPPORT FOR CONDUCTING THE SECRETARIAT OF THE INTERNATIONAL STANDARDS ORGANIZATION (ISO) TECHNICAL COMMITTEE (TC) 147 ON WATER QUALITY WHICH IS DEVELOPING INTERNATIONAL STANDARDS. THE TC 147 SCOPE IS "STANDARDIZATION IN THE FIELD OF WATER QUALITY, INCLUDING DEFINITION OF TERMS, SAMPLING OF WATERS, MEASUREMENT AND REPORTING OF WATER CHARACTERISTICS; LIMITS OF ACCEPTABILITY FOR WATER QUALITY ARE EXCLUDED." APPROACH: ACTIVITIES INCLUDE STANDARDIZATION IN CHEMICAL, PHYSICAL, RADIOLOGICAL, MICROBIOLOGICAL, BIOLOGICAL AND BIOCHEMICAL METHODS. FORTY-FIVE COUNTRIES ARE MEMBERS OF ISO/TC 147 WHICH WAS ORGANIZED IN 1972. RESULTS TO DATE: FOURTEEN DRAFTS OF PROPOSED STANDARDS HAVE BEEN DEVELOPED AND 42 WORKING GROUPS WHICH ARE PREPARING DRAFTS OF INTERNATIONAL STANDARDS HAVE BEEN ESTABLISHED.

*PROJECT: 004886-THE DISPERSION AND FATE OF CONTAMINANTS IN A STRATIFIED LAKE

STARTING/ COMPLETION DATE : 01/78 - 01/81 : FY79
TASK CODE=N769 -0038 **EPA=R805716 ** (GRANT)

EPA OFFICER.: DM DOLAN EPA/ERL - DULUTH 313-226-7811
INVESTIGATOR.: W LICK DEPT. OF EARTH SCIENCES CASE WESTERN RESERVE UNIVERSITY
MILESTONES...: 09/78 -COMPLETE FIELD STUDIES, BEGIN LAB STUDY
01/79 -COMPLETE 2-D MODELING
04/79 -COMPLETE LAB STUDIES, BEGIN FIELD STUDIES
01/80 -BEGIN DATA ANALYSIS
PROGRAM ID...: (PE-769) GREAT LAKES
MANDATE......: 30-99 LIMNOLOGY
CURR. RESULTS: MOST OF LAB EXPERIMENTS COMPLETED. MATH MODELS IN TWO DIMENSION HAVE BEEN CHECKED AGAINST FIELD OBSERVATIONS. THE PROJECT IS ENTERING THE DATA ANALYSIS PHASE.
ORDIS CODES..: RECN-004886 SSIE-GMA 5853 EPA -R805716 TASK-N769 -0038
ORD -RN10830-3079 MAND-30-99 PE -769
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: TO UNDERSTAND THE FATE OF CONTAMINANTS IN LARGE LAKES ESPECIALLY DURING STRATIFICATION. APPROACH: STUDY IN DETAIL THE FATE OF NUTRIENTS AND TRACE METALS AS AFFECTED BY DISPERSION IN THE LAKE AND BY BIOCHEMICAL TRANSFORMATIONS IN THE SEDIMENTS. THE EMPHASIS IS ON MATHEMATICAL MODELING AND LAB EXPERIMENTS. RESULTS TO DATE: MOST OF LAB EXPERIMENTS COMPLETED. MATH MODELS IN TWO DIMENSION HAVE BEEN CHECKED AGAINST FIELD OBSERVATIONS. THE PROJECT IS ENTERING THE DATA ANALYSIS PHASE.

*PROJECT: 004799-OUTDOOR SIMULATION OF AIR POLLUTION CONTROL STRATEGIES

STARTING/ COMPLETION DATE : 03/78 - 08/81 : FY79
TASK CODE=G603A-AC-017 **EPA=R805726-02 ** (GRANT)

EPA OFFICER.: B GAY | EPA/ESRL - RTP | 919-541-2830
INVESTIGATOR.: HE JEFFRIES | UNIV OF NORTH CAROLINA | SCH OF PUBLIC HLTH
RM KAMENS | UNIV OF NORTH CAROLINA | SCH OF PUBLIC HLTH
MILESTONES...: 03/81 -ORD FINAL REPORT ON SMOG CHAMBER FINDINGS
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
FINAL OUTPUT.: ORD FINAL REPORT ON SMOG CHAMBER FINDINGS
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: EXPERIMENTS HAVE SHOWN: EFFECT OF DAY OLD, DILUTE SMOG ON FRESH URBAN MIX, EFFECTS OF CHANGES IN STARTING CONDITIONS FOR FRESH URBAN MIX SYSTEMS, COMPARISON OF REACTIVITY OF UNC URBAN HYDROCARBON MIX WITH REACTIVITY OF PROPYLENE/BUTANE MIXTURE.

ORDIS CODES..: RECN-004799 | SSIE-GMA 5982 | EPA -R805726-02 | TASK-G603A-AC-017
ORD -RG10B30-1079 | LABN-G603A-AC-17 | MAND-10-02
PE -603 | LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR | CATEGORY-RESEARCH | DATA-UPDATED | UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT......: OBJECTIVE: THE OBJECTIVES OF THIS GRANT ARE TO DEFINE EFFECTS OF DAY OLD SMOG, INDIVIDUAL COMPONENTS OF DAY OLD SMOG, REACTIVITY OF HYDROCARBONS IN MULTIDAY SMOG CHAMBER IRRADIATIONS WHICH SIMULATE LONG RANGE POLLUTANT TRANSPORT CONDITIONS AND STUDY THE EFFECTS OF NATURAL HYDROCARBONS ON URBAN HYDROCARBON REACTIVITY. APPROACH: EXPERIMENTS WILL BE CONDUCTED IN DUAL TEFLON OUTDOOR SMOG CHAMBERS USING NATURAL SUNLIGHT. MULTIDAY IRRADIATIONS WILL BE CARRIED OUT WITH AND WITHOUT ADDITION OF FRESH EMISSIONS TO DETERMINE THE INFLUENCE OF SPENT SMOG SYSTEMS ON OXIDANT FORMATION THE NEXT DAY. A SERIES OF EXPERIMENTS WILL BE PERFORMED TO QUANTIFY THE EFFECT OF DAY OLD SMOG COMPONENTS BY ADDING MATERIALS SUCH AS O3, NO2, ALDEHYDES AND VARIOUS NITROGEN ACIDS TO NEW FIRST DAY SYSTEMS. RESULTS TO DATE: EXPERIMENTS HAVE BEEN PERFORMED WHICH SHOW: THE EFFECT OF DAY OLD, DILUTE SMOG ON A FRESH URBAN MIX, EFFECTS OF INDIVIDUAL CHANGES IN THE STARTING CONDITIONS FOR FRESH URBAN MIX SYSTEMS, INCLUDING THE ADDITION OF SIMULATED DAY OLD SMOG, A COMPARISON OF THE REACTIVITY OF THE UNC URBAN HYDROCARBON MIX WITH THE REACTIVITY OF THE PROPYLENE/BUTANE MIXTURE.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO.*(Do not use this space)*

SSIE

EPA R805733-02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

High Voltage Control and Electrostatic Field Investigations

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. George A. Rinard	Denver Research Institute	Electronics
Dr. Donald E. Rugg	Denver Research Institute	Electronics
Dr. Michael Durham	Denver Research Institute	Electronics
Mr. Whitney Patten	Denver Research Institute	Electronics

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Denver (Colorado Seminary)
University Park Station, P.O. Box 10127
Denver, Colorado 80210

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The goal of the proposed project is to generate, search out and otherwise obtain, organize and disseminate knowledge which will contribute significantly to an increase in the efficiency of electrostatic precipitators, (ESP). This goal is divided into four objectives, each directed at some aspect of the relationship between electric field, dust particles and current, as affected by the dimensional characteristics of the precipitator.

The first objective is to determine means for improving the data processing capability of the existing circuits in the ESP system of the Control Engineering Laboratory at RTP.

The second objective is to theoretically and experimentally examine ESP power control circuitry for conventional ESP's to determine the most suitable control strategy for given operational conditions.

The third objective is to continue the study of wire spacing on both hotside and coldside ESP's. This work is somewhat dependent on the energization and control strategy being studied.

The fourth objective is to study the application of pulsed power supplies primarily in conventional ESP's, but also in regard to more novel ESP designs.

*PROJECT: 002137-SIMPLIFIED SAMPLING SYSTEMS

STARTING/ COMPLETION DATE : 10/77 - 09/80 : FY79
TASK CODE=G712B-BC-010 **EPA=R805738 ** (GRANT)

EPA OFFICER.: K KNAPP   EPA/ESRL - RTP   919-541-3085
INVESTIGATOR.: RJ HEINSOHN   PENNSYLVANIA STATE UNIV   MECH ENG DEPT
MILESTONES...: 09/78 -CONSTRUCT FIELD PROTOTYPE
11/78 -DELIVER ONE FIELD PROTOTYPE TO PO
12/78 -BEGIN FIELD TESTING
09/80 -FINAL REPORT
PROGRAM ID...: (PE-712)   CHARAC. & MEASUREMENT METHODS DEVELOPMENT
FINAL OUTPUT.: SIMPLIFIED SOURCE SAMPLING SYSTEM FOR PARTICULATE EMISSION MEASUREMENT.
MANDATE......: 10-02   CLEAN AIR ACT
CURR. RESULTS: DILUTION EJECTOR PUMP DEVELOPED AND EVALUATED. PROTOTYPE SYSTEM DELIVERED TO EPA. SECOND PROTOTYPE BEING EVALUATED AT PENN STATE.
ORDIS CODES..: RECN-002137   SSIE-GMA 4912 1   EPA -R805738   TASK-G712B-BC-010
ORD -RG10B30-1079   MAND-10-02   PE -712
LABT-EPE

PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH   DATA-UPDATED   UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS TASK IS TO DESIGN, BUILD, AND TEST A SIMPLIFIED SOURCE SAMPLING SYSTEM. THIS SYSTEM WILL BE SUITABLE FOR USE AS METHODS 5, 17, AND THE IP SYSTEM. THE SYSTEM WILL HAVE A DILUTION SYSTEM WHICH CAN COLLECT PARTICULATE MATTER AT AMBIENT TEMPERATURE AND PRESSURE. EASE OF HANDLING AND USE ARE ALSO FACTORS WHICH ARE BEING EVALUATED. APPROACH: A DILUTION EJECTOR PUMP IS THE HEART OF THIS SYSTEM. IT PROVIDES THE PUMPING AND THE NEEDED DILUTION AIR. RESULTS TO DATE: THE DILUTION EJECTOR PUMP HAS BEEN DEVELOPED AND EVALUATED. A PROTOTYPE SYSTEM HAS BEEN DELIVERED TO EPA. A SECOND PROTOTYPE IS BEING EVALUATED AT PENNSYLVANIA STATE UNIVERSITY.

*PROJECT: 001091-ISOLATION, ANALYSIS AND TOXICITY OF ALGAL AND BACTERIAL ENDOTOXINS

STARTING/ COMPLETION DATE : 01/78 - 01/79 : FY78
TASK CODE=D614 -035 **EPA=R805754-01 ** (GRANT)

EPA OFFICER.: EC LIPPY — EPA/HERL - CINC

INVESTIGATOR.: JL SYKORA	UNIV OF PITTSBURGH	GRAD SCH OF PUBLIC HLTH
G KELETI	UNIV OF PITTSBURGH	GRAD SCH OF PUBLIC HLTH
RB YEE	UNIV OF PITTSBURGH	GRAD SCH OF PUBLIC HLTH
I CCMPBELL	UNIV OF PITTSBURGH	GRAD SCH OF PUBLIC HLTH

MILESTONES...: 12/77 -PRODUCTION AND CHARACTERIZATION OF ALGAE ENDOTOXINS
12/79 -TOXICITY OF ALGAE ENDOTOXINS

PROGRAM ID...: (PE-614) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY

MANDATE......: 10-13 SOLID WASTE DISPOSAL ACT

ORDIS CODES..: RECN-001091 SSIE-GMA 5373 EPA -R805754-01 TASK-D614 -035
ORD -RD10B30-1078 MAND-10-13 PE -614
LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: THE OBJECTIVES OF THE PROJECT ARE BASED ON THE LACK OF INFORMATION CONCERNING THE ORIGIN OF ENDOTOXINS (LIPOPOLYSACCHARIDES) IN DRINKING WATER, THEIR COMPOSITION AND POSSIBLE HEALTH EFFECTS. THE PROBLEMS REQUIRING SOLUTION ARE THE PRODUCTION, QUANTITATIVE AND QUALITATIVE COMPOSITION OF ALGAL ENDOTOXINS, AS COMPARED WITH LIPOPOLYSACCHARIDES DERIVED FROM GRAM-NEGATIVE BACTERIA. ANOTHER IMPORTANT ASPECT TO BE ELUCIDATED AND STUDIED IS THE TOXICITY OF DIFFERENT ENDOTOXINS AND THEIR CONSTITUENTS AS RELATED TO DRINKING WATER SUPPLIES AND HUMAN HEALTH. THE APPROACH INCLUDES (1) ENDOTOXIN ISOLATION FROM AXENIC CLONES OF ALGAE AND BACTERIA, (2) ALGAL ENDOTOXIN COMPOSITION AS COMPARED WITH BACTERIAL LIPOPOLYSACCHARIDES AND (3) TOXICITY OF ALGAL ENDOTOXINS AS COMPARED WITH THOSE OF BACTERIA. THE BENEFITS DERIVED FROM THIS STUDY WILL INCLUDE POSSIBLE SOLUTION TO WATERBORNE GASTROENTERITIS OF UNKNOWN ORIGIN WHICH REPRESENTS A MAJOR SEGMENT OF REPORTED GASTROINTESTINAL DISEASES IN THE UNITED STATES. FURTHER, THE RESULTS OF THIS STUDY WILL PROVIDE BETTER UNDERSTANDING CONCERNING THE ORIGIN OF ENDOTOXINS IN THE ENVIRONMENT. ON THIS BASIS PREVENTION AND CONTROL OF THESE COMPOUNDS IN DRINKING WATER SUPPLIES MAY BE DEVELOPED.

*PROJECT: 001467-PROCESS AUTOMATION INVESTIGATIONS FOR ENVIRONMENTAL PROCESS CONTROL

STARTING/ COMPLETION DATE : 03/78 - 03/81 : FY78
TASK CODE=F623A-374 **EPA=R805758 ** (GRANT)

EPA OFFICER.: WJ SENSING EPA/IERL - RTP 919-541-2557
INVESTIGATOR.: PH GARRETT UNIV OF CINCINNATI SCH OF ENG/ELEC ENG TECH
MILESTONES...: 09/78 -PRELIMINARY RECOMENDATIONS ON SCRUBBER CONTROL SYSTEM
03/79 -QUARTERLY REPORT ON AUTOMATIC CONTROL FOR SCRUBBERS
03/81 -FINAL DESIGN RECOMMEND. WITH OR WITHOUT COMPUTER CONTROL
PROGRAM ID...: (PE-623) EXTRACTION AND PROCESSING TECHNOLOGY
FINAL OUTPUT.: SUPPORT OF IERL PROJECTS THAT REQUIRE DATA ACQUISITION
AND AUTOMATIC CONTROL.
MANDATE......: 30-99 ENGINEERING
CURR. RESULTS: RECOMMENDATION FOR CONTROL SCHEME ASSURING HIGH
UTILIZATION OF LIMESTONE TO PREVENT SCALING.
ORDIS CODES..: RECN-001467 SSIE-GMA 4976 EPA -R805758 TASK-F623A-374
ORD -RF10830-3078 MAND-30-99 PE -623
LABT-EET

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE/APPROACH: THE PRIMARY OBJECTIVE OF THIS PROJECT IS THE INVESTIGATION AND APPLICATION OF PROCESS AUTOMATION METHODS TO ENVIRONMENTAL CONTROL PROCESSES. SUBORDINATE OBJECTIVES WILL BE THE CONTRIBUTION TO IMPROVEMENT IN ACKNOWLEDGED PROBLEMS ASSOCIATED WITH THE IMPLEMENTATION OF PROCESS AUTOMATION METHODS. OUTPUT: THIS EFFORT WILL SUPPORT IERL PROJECTS THAT REQUIRE DATA ACQUISITION AND AUTOMATIC CONTROL. SPECIFIC SYSTEMS WILL BE EVALUATED FOR SELECTED CONTROL PROCESSES. THE BENEFITS OBTAINED WITH THE REDUCTIONS IN THE VARIANCE OF THE CONTROLLED PROCESS VARIABLES WILL BE BETTER UNDERSTOOD.

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*PROJECT: 002973-REGIONAL VISIBILITY - THE COLORADO PLATEAU

                   STARTING/ COMPLETION DATE : 06/78 - 06/80 :   FY79
                   TASK CODE=J833C-76     **EPA=R805788-01  ** (GRANT)
EPA  OFFICER.: M  PITCHFORD               EPA/EMSL - LAS VEGAS              702-736-2969
INVESTIGATOR.: EG WALTHER                 JOHN MUIR INST/ENV STUDIES
               EG WALTHER                 UNIV OF NEVADA/LAS VEGAS          GRAD SCH/DEPT OF BIOL
MILESTONES...: 06/80 -REPORT SUMMARIZING OPERATIONS AND DATA
PROGRAM ID...: (PE-833 )           INSTRUMENTATION & MEASUREMENTS
FINAL OUTPUT.: REPORT SUMMARIZING OPERATIONS AND DATA.
MANDATE......: 10-02     CLEAN AIR ACT
               20-62     DAA FOR ENVIRONMENTAL ENGIN. AND TECHNOLOGY
CURR. RESULTS: SIX MONTHS OF BASELINE DATA FROM 14 STATIONS.
ORDIS CODES..: RECN-002973         SSIE-GMA  5006 1      EPA -R805788-01       TASK-J833C-76
               ORD -RJ10B30-5079   LABN-J625C-76         MAND-10-02
               MAND-20-62          PE   -833                                   LABT-MTS

PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
ABSTRACT.....: OBJECTIVE: DEVELOP (AND COLLECT FROM OTHERS) BACKGROUND VISIBILITY DATA NECESSARY FOR (1) SETTING
                VISIBILITY STANDARDS AND (2) VALIDATION OF VISIBILITY MODELS. APPROACH: A 14 TO 30-STATION NETWORK
                OF VISIBILITY MONITORING STATIONS ARE BEING ESTABLISHED ON THE COLORADO PLATEAU TO DEVELOP A
                UNIFORM REGIONAL DATA BASE ON VISIBILITY IN THE WESTERN ENERGY RESOURCE DEVELOPMENT AREA. STATIONS
                WILL BE INSTRUMENTED WITH TELEPHOTOMETERS, AND SOME WITH NEPHELOMETERS, PARTICULATE SAMPLERS AND
                METEOROLOGICAL INSTRUMENTS. RESULTS TO DATE: SIX MONTHS OF BASELINE DATA FROM 14 STATIONS.


*PROJECT: 004660-OIL SPILL AND OIL POLLUTION REPORTS III

                   STARTING/ COMPLETION DATE : 02/78 - 01/80 :   FY79
                   TASK CODE=B623C-781    **EPA=R805803-01  ** (GRANT)
EPA  OFFICER.: LT MCCARTHY                EPA/IERL - CINC
INVESTIGATOR.: HW OFFEN                   UNIV OF CALIFORNIA                SANTA BARBARA CAMPUS
MILESTONES...: 01/80 -FINAL REPORT RECEIVED
PROGRAM ID...: (PE-623 )           EXTRACTION AND PROCESSING TECHNOLOGY
MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
               20-10     AA FOR WATER AND HAZARDOUS MATERIALS
               20-11     DAA FOR WATER PLANNING AND STANDARDS
               20-12     DAA FOR WATER PROGRAM OPERATIONS
               20-13     DAA FOR DRINKING WATER
CURR. RESULTS: SEVENTEEN (17) QUARTERLY REPORTS HAVE BEEN ISSUED
               SINCE JULY 1974.
ORDIS CODES..: RECN-004660         SSIE-GMA  5920        EPA -R805803-01       TASK-B623C-781
               ORD -RB10B30-5079   MAND-10-01            MAND-20-10
               MAND-20-11          MAND-20-12            MAND-20-13            PE   -623
                                   LABT-EET
PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-UPDATED          UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
ABSTRACT.....: OBJECTIVE: THE SPECIFIC OBJECTIVE WILL BE TO COMPILE AND ISSUE FOR PUBLICATION BIBLIOGRAPHIC REPORTS
                CONTAINING INFORMATION ON OIL POLLUTION. APPROACH: LITERATURE SEARCH IS THE MAJOR APPROACH. RESULTS
                TO DATE: SEVENTEEN (17) QUARTERLY REPORTS HAVE BEEN ISSUED SINCE JULY 1974.
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*PROJECT: 001123-CANCER INCIDENCE IN RELATION TO ASBESTOS IN DRINKING WATER IN THE PUGET
                SOUND REGION
                     STARTING/ COMPLETION DATE : 04/78 - 05/81 :   FY79
                     TASK CODE=D823B-038C   **EPA=R805846-02  ** (GRANT)
  EPA  OFFICER.: L  MCCABE                EPA/HERL - CINC                 513-684-7211
  INVESTIGATOR.: L  POLISSAR              FRED HUTCHINSON RES CTR         PROG IN EPIDEM & BIOSTATS
                 DB THOMAS                FRED HUTCHINSON RES CTR         PROG IN EPIDEM & BIOSTATS
                 ES BOATMAN                                               UNIVERSITY OF WASHINGTON
                 W  HINDS                 STATE DEPT  SOC/HLTH SERV
  MILESTONES...: 04/78 -START
                 01/79 -REPORT ON CANCER INCIDENCE AND MORTALITY RATES
                 01/80 -REPORT ON OCCUPATIONALLY LINKED CANCER
                 04/81 -REPORT ON CASE CONTROL STUDY
  PROGRAM ID...: (PE-823 )          HEALTH EFFECTS
  FINAL OUTPUT.: REPORT ON CASE-CONTROL STUDY
  MANDATE......: 10-15     SAFE DRINKING WATER ACT
  ORDIS CODES..: RECN-001123        SSIE-GMA  5388       EPA -R805846-02      TASK-D823B-038C
                 ORD -RD10B30-1079  LABN-D614B-016       MAND-10-15
                 PE  -823                                LABT-OHR

  PROJ STATUS..: PROJECT-ACTIVE     CATEGORY-RESEARCH    DATA-UPDATED         UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: CANCER MORTALITY AND INCIDENCE DATA WILL BE USED TO DETERMINE IF THERE IS AN ELEVATED CANCER RISK FOR THOSE PERSONS LIVING IN AREAS OF THE PUGET SOUND REGION WITH A HIGH CONCENTRATION OF ASBESTOS IN THE WATER SUPPLY. DATA WILL INCLUDE DEATH CERTIFICATES, INCIDENCE RECORDS FROM SEER POPULATION-BASED TUMOR REGISTRY, CENSUS TABULATIONS, AND WATER ANALYSES. STATISTICAL METHODS WILL INCLUDE CALCULATIONS OF RATES AND RELATIVE RISKS. A CASE-CONTROL STUDY WILL BE UNDERTAKEN.

*PROJECT: 001890-STRATOSPHERIC OZONE IN URBAN AIR

STARTING/ COMPLETION DATE : 04/78 - 02/79 : FY79
TASK CODE=G603A-AH-018 **EPA=R805913 ** (GRANT)

EPA OFFICER.: J BUFALINI   EPA/ESRL - RTP
INVESTIGATOR.: L HUSAIN   191-541-2422   STATE DEPT. OF HEALTH
MILESTONES...: 02/79 -REPORT ON FY-78 SUMMER STUDY
PROGRAM ID...: (PE-603)   HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
MANDATE.......: 20-20   AA FOR AIR AND WASTE MANAGEMENT
20-23   DAA FOR AIR QUALITY PLANNING AND STANDARDS
20-R07   EPA REGION VII
CURR. RESULTS: O3 CAN CONTRIBUTE 20-40 PPB OF O3 IN HOUSTON.
DATA INTERPRETATION MADE DIFFICULT SINCE AN ATOMIC
BLAST HAD OCCURED DURING THAT TIME.

ORDIS CODES..: RECN-001890	SSIE-GMA 5215 1	EPA -R805913	TASK-G603A-AH-018
ORD -RG10B30-2079	LABN-G603A-AH-14	MAND-20-20	
MAND-20-23	MAND-20-R07	PE -603	
LABT-EPE			
PROJ STATUS..: ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
	ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS WORK IS TO STUDY THE 7BE AND 32P IN PARTICULATES. BERYLLIUM-7 HAS A HALF-LIFE OF 53 DAYS WHILE PHOSPHOROUS-32 IS ONLY 14.3. BY MEASURING THESE TO COMPOUNDS, THE STRATOSPHERIC CONTRIBUTION TO O3 CAN BE DETERMINED. APPROACH: PARTICULATE SAMPLES WERE COLLECTED IN THE FY-78 FIELD STUDY IN HOUSTON, TEXAS. THESE SAMPLES WERE THEN ANALYZED FOR 7BE AND 32P WITH THE USE OF LOW LEVEL COUNTING TECHNIQUES. RESULTS TO DATE: RESULTS TO DATE SHOW THAT O3 CAN CONTRIBUTE 20-40 PPB OF O3 IN HOUSTON. DATA INTERPRETATION WAS MADE DIFFICULT SINCE AN ATOMIC BLAST HAD OCCURRED DURING THAT TIME.

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*PROJECT: 001663-SULFUR BUDGET IN POWER PLANT PLUMES - PROCESSING, MANAGEMENT AND
                 ANALYSIS OF PROJECT STATE DATA
                      STARTING/ COMPLETION DATE : 08/75 - 06/81 :   FY79
                      TASK CODE=G603A-AA-015 **EPA=R805918-01  ** (GRANT)
  EPA  OFFICER.: W  WILSON             EPA/ESRL - RTP                  919-541-2582
  INVESTIGATOR.: N  GILLANI            WASHINGTON UNIV                 MECH ENG DEPT
  MILESTONES...: 04/79 -DISTRIBUTION OF DATA VOLUMES
                 05/79 -DATA REPORT AND MEETING
                 06/79 -REPORT ON DATA MANAGEMENT AND ANALYSIS
                 06/79 -REPORT ON PLUME TRANSPORT IN COLD WEATHER
  PROGRAM ID...: (PE-603 )        HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
  MANDATE......: 10-02      CLEAN AIR ACT
  CURR. RESULTS: AIRCRAFT DATA HAS BEEN COLLECTED AND IS BEING REDUCED
                 DISTRIBUTION AND ANALYSIS.
  ORDIS CODES..: RECN-001663       SSIE-GMA  4560 2     EPA -R805918-01      TASK-G603A-AA-015
                 ORD -RG10830-1079 MAND-10-02           PE  -603
                                   LABT-EPE

  PROJ STATUS..: ACTIVE -MULTIYEAR    CATEGORY-RESEARCH    DATA-UPDATED         UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: TO PROVIDE CENTRALIZED DATA PROCESSING AND DATA BASE MANAGEMENT OF AIRCRAFT AND SELECTED METEOROLOGICAL DATA COLLECTED IN THE FIELD PROGRAMS OF STATE AND TO ANALYZE THE FIELD DATA IN ORDER TO DEVELOP, CALIBRATE AND VALIDATE A SULFUR PLUME MODEL APPLICABLE TO MESOSCALE AND LONG-RANGE TRANSPORT OF SULFUR. APPROACH: ON-SITE DATA PROCESSING WILL BE PERFORMED WITH 24-HOUR TURNAROUND YIELDING GRAPHICAL OUTPUT OF ALL AIRCRAFT DATA TO ENSURE DATA QUALITY AND FEEDBACK TO FIELD CREW. AFTER EACH FIELD PROGRAM, COMPLETE DATA VOLUMES AND DATA TAPES WILL BE PREPARED FOR PERMANENT STORAGE AND DISTRIBUTION. PARAMETERIZATION SCHEMES WILL BE USED IN A DIAGNOSTIC PLUME MODEL TO DETERMINE PLUME SULFUR BUDGETS. RESULTS TO DATE: AIRCRAFT DATA HAS BEEN COLLECTED AND IS BEING REDUCED FOR DISTRIBUTION AND ANALYSIS.

*PROJECT: 004951-STORMWATER POLLUTION ANALYSIS WITH MAC MODEL IN CONTINUING PLANNING UNDER 208 PLANNING
STARTING/ COMPLETION DATE : 04/78 - 02/80 : FY79
TASK CODE=C822A-S2T029 **EPA=R805927 ** (GRANT)

EPA OFFICER.: DC AMMON   EPA/MERL - CINC   201-321-6680
INVESTIGATOR.: V YUCEL   ASSN. OF BAY AREA GOVERNMENTS
JA LAGER   METCALF & EDDY ENG INC
YJ LITWIN   RAMLIT ASSOCIATES INC.

MILESTONES...: 12/78 -SAMPLING PROGRAM UNDERWAY
12/78 -GRANT CONTINUATION
01/79 -PHASE I COMPLETION: EVALUATION/ANALYSIS OF MONITORING PROGRAM
12/79 -PHASE II COMPLETION: DEVELOP USER'S GUIDE AND DOCUMENTATION
02/80 -FINAL REPORT PUBLISHED
02/80 -MAC MODEL USER'S MANUAL AND DOCUMENTATION

PROGRAM ID...: (PE-822)   POINT SOURCE TECH DEV (WASTEWATER SYS)
FINAL OUTPUT.: MAC MODEL USERS MANUAL AND DOCUMENTATION
MANDATE......: 10-01   FEDERAL WATER POLLUTION CONTROL ACT
30-99   ENVIRONMENTAL

CURR. RESULTS: EVALUATION OF ABAG'S EXPERIENCE WITH MAC MODEL APPLICATION HAS BEEN COMPLETED. ASSESSMENT OF MAC MODEL APPLICATION EXPERIENCE AND RESULTS IN CITY OF SAN FRANCISCO COMPLETED. SAMPLING AND MONITORING PROGRAM UNDERWAY.

ORDIS CODES..: RECN-004951	SSIE-GMA 6036	EPA -R805927	TASK-C822A-S2T029
ORD -RC10B30-5079	MAND-10-01	MAND-30-99	
PE -822		LABT-EET	

PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH   DATA-UPDATED   UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: THE STUDY PERTAINS TO THE REFINEMENT AND DOCUMENTATION OF THE MACROSCOPIC PLANNING (MAC) MODEL BASED ON THE ASSOCIATION OF BAY AREA GOVERNMENTS' (ABAG'S) APPLICATION EXPERIENCE FOR THEIR PL 92-500, SECTION 208 AREAWIDE WASTEWATER MANAGEMENT STUDY. THE MAC MODEL OFFERS BROAD BENEFITS TO THE CONTINUING PLANNING PROCESS THROUGH WIDE AERIAL COVERAGE, SENSITIVITY TO LAND USE MANAGEMENT, ANALYSIS OF MITIGATION MEASURES, AND SIMPLICITY OF APPLICATION BY LOCAL AGENCIES. NATIONAL REFINEMENT AND DISSEMINATION OF THE METHODOLOGY WILL TAKE PLACE BY WAY OF: 1. SUMMARY OF ABAG EXPERIENCE WITH MAC MODEL APPLICATION. 2. MODEL REFINEMENT AND SENSITIVITY ANALYSIS. 3. SELECTIVE MONITORING/CALIBRATION. 4. DOCUMENTATION AND USERS GUIDE. RESULTS TO DATE: THE EVALUATION OF ABAG'S EXPERIENCE WITH MAC MODEL APPLICATION HAS BEEN COMPLETED. THE ASSESSMENT OF MAC MODEL APPLICATION EXPERIENCE AND RESULTS IN THE CITY OF SAN FRANCISCO HAS BEEN COMPLETED. SAMPLING AND MONITORING PROGRAM IS UNDERWAY.

*PROJECT: 004345-DEVELOPMENT OF STANDARD METHODS FOR THE DETECTION OF ENTERIC VIRUSES IN RAW AND TREATED WATER
STARTING/ COMPLETION DATE : 10/78 - 09/81 : FY79
TASK CODE=A884 -13 **EPA=R805933-01 ** (GRANT)

EPA OFFICER.: G BERG EPA/EMSL - CINC 513-684-7357
INVESTIGATOR.: JL MELNICK BAYLOR COLLEGE OF MEDICINE
MILESTONES...: 10/79 -INTERIM REPORT
10/80 -INTERIM REPORT
09/81 -IMPROVED METHODS FOR CONCENT. AND DETECTING SMALL QUANTITIES OF VIRUSES IN WATERS
PROGRAM ID...: (PE-884) MEASUREMENT, TECHNIQUES & EQUIP DEV
FINAL OUTPUT.: IMPROVED METHODS FOR CONCENTRATING AND DETECTING SMALL QUANTITIES OF VIRUSES IN WATERS.
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
10-15 SAFE DRINKING WATER ACT
20-11 DAA FOR WATER PLANNING AND STANDARDS
20-13 DAA FOR DRINKING WATER
30-99 VIROLOGY METHODS
CURR. RESULTS: ACHIEVED EFFECTIVE RECOVERY OF ENTERIC VIRUSES USING ANION-EXCHANGE RESIN MEMBRANE FILTER.

ORDIS CODES..:	RECN-004345	SSIE-GMA 5626	EPA -R805933-01	TASK-A884 -13
	ORD -RA10B30-5079	LABN-A612-13	MAND-10-01	
	MAND-10-15	MAND-20-11	MAND-20-13	MAND-30-99
	PE -884		LABT-MTS	
PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: QUANTITATIVE STUDIES WILL BE CONDUCTED TO DEVELOP METHODS FOR THE DETECTION OF SMALL NUMBERS OF VIRUSES IN LARGE VOLUMES OF WATER. SPECIAL ATTENTION WILL BE GIVEN TO THE PRESENCE OF VIRUSES IN SOLIDS IN WATERS. RADIOIMMUNOASSAY AND OTHER SEROLOGICAL TECHNIQUES WILL BE APPLIED TO THE RAPID IDENTIFICATION OF VIRUSES IN WATERS. STUDIES WILL BE UNDERTAKEN IN CONJUNCTION WITH ASTM TO DEVELOP STANDARDIZED TECHNIQUES FOR RECOVERING WATER-BORNE VIRUSES. APPROACH: 1. EXAMINE NEWLY DEVELOPED ANION-EXCHANGE RESIN MEMBRANE FILTERS THAT ADSORB VIRUSES FROM WATER AT NEUTRAL PH LEVEL AND DO NOT REQUIRE THE PRESENCE OF SALTS. 2. EVALUATE ENZYME-LINKED IMMUNOADSORBENT ASSAYS (ELISA) AS A METHOD FOR RAPID IDENTIFICATION OF VIRUSES. 3. EXTEND THE COORDINATION AND PARTICIPATION IN ASTM TESTS DIRECTED AT CHOOSING A METHOD FOR RECOVERING SMALL NUMBERS OF VIRUSES FROM LARGE VOLUMES OF WATERS. RESULTS TO DATE: ACHIEVED EFFECTIVE RECOVERY OF ENTERIC VIRUSES USING THE ANION-EXCHANGE RESIN MEMBRANE FILTER.

*PROJECT: 002162-FUEL ECONOMY AND EMISSIONS PERFORMANCE OF DIESEL AUTOMOBILES

STARTING/ COMPLETION DATE : 06/78 - 01/81 : FY79
TASK CODE=G712B-BC-053 **EPA=R805934-01 ** (GRANT)

EPA OFFICER.: P GABELE EPA/IERL - CINC 919-541-3037
INVESTIGATOR.: RE GIBBS STATE DEPT OF ENV CONSRV
GP WOTZAK STATE DEPT OF ENV CONSRV
SM BYER STATE DEPT OF ENV CONSRV
MILESTONES...: 09/79 -INTERIM REPORT
PROGRAM ID...: (PE-712) CHARAC. & MEASUREMENT METHODS DEVELOPMENT
MANDATE......: 10-02 CLEAN AIR ACT
20-24 DAA FOR MOBILE SOURCE AIR POLLUTION CONTROL
CURR. RESULTS: EFFORT DIRECTED TOWARD BUILD-UP OF SYSTEM REQUIRED FOR IMPLEMENTATION OF RESEARCH PROGRAM AND ONLY PRELIMINARY DATA HAS BEEN GENERATED AT THIS TIME.
ORDIS CODES..: RECN-002162 SSIE-GMA 5198 1 EPA -R805934-01 TASK-G712B-BC-053
ORD -RB10B30-5079 MAND-10-02 MAND-20-24
PE -712 LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-BEING UPDATED UPDATED- OCT-DEC 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS PROJECT IS THE COLLECTION OF COMPREHENSIVE EMISSION AND FUEL CONSUMPTION DATA FROM IN-USE DIESEL POWERED AUTOMOBILES. APPROACH: CONSUMER VEHICLES WILL BE TESTED OVER PERIODIC INTERVALS FOR REGULATED EMISSIONS, FUEL CONSUMPTION, PARTICULATE MASS, DETAILED CHEMICAL ANALYSIS OF PARTICULATE AND MUTAGENIC ACTIVITY OF PARTICULATE EXTRACTS BY THE AMES METHOD.

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U.S. ENVIRONMENTAL PROTECTION AGENCY

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OMB No. 158-R0081

PROJECT NO. (Do not use this space)

SSIE

EPA R805943-01-0

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT National Inventory of Atmospheric Emissions from Stationary Sources.

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Principal Investigator: Owen W. Dykema, Project Manager, Stationary Systems Office, Environment and Energy Conservation Division.

Project Director: Jerome Rossoff, Director, Stationary Systems Office, Environment and Energy Conservation Division.

NAME AND ADDRESS OF APPLICANT INSTITUTION

The Aerospace Corporation
P. O. Box 92957
Los Angeles, California 90009

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

A nationwide inventory of combustion- and noncombustion-related atmospheric emissions from stationary point sources was conducted under EPA Grant No. R803283. The purpose was to assist the Combustion Research Branch (CRB) of the Industrial Environmental Research Laboratory (IERL) at Research Triangle Park (RTP), North Carolina in the establishment of priorities for combustion-related pollution control research programs. The atmospheric pollutants of interest in this grant, as defined by the CRB, are particulate matter, oxides of nitrogen, unburned hydrocarbons and carbon monoxide. The inventory was confined to emissions from a group of nine major industries or processes that contribute more than 90% of stationary point source emissions. The resulting inventory is unique in that it projects the emissions and charge rates to any time in the future, and cites uncertainties in the projected data.

The purpose of the current grant is to: 1) update the previous inventory; 2) expand the inventory to include emissions from stationary sources identified as "area type sources", e.g., gasoline service stations and internal combustion engines for home use; 3) add the previously omitted food and agricultural industries to the inventory; and 4) develop a geographical distribution of point source emissions by identifying the industries which emit large fractions of the total nationwide emissions within areas of high population density.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

RF-79-243 (3741)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R 805547-02

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

"Baculovirus Pesticides: Identification of Markers for Genetic Studies"

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Max D. Summers, Professor, Entomology Department

NAME AND ADDRESS OF APPLICANT INSTITUTION

Texas A & M Research Foundation
Faculty Exchange Box H
College Station, Texas 77843

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The development and application of identification and detection technology is proposed for evaluating the genetics of baculoviruses pesticides for recombination and mutation. This is being accomplished by use of restriction endonuclease fragment analysis, SDS-polyacrylamide gel electrophoresis and radioimmunoassay. With such techniques the ability to identify and monitor for baculovirus-host interaction and potential to undergo genetic change can be accomplished.

*PROJECT: 004949-JOINT DRY-WET WEATHER FLOW TREATMENT OPTIMIZATION

STARTING/ COMPLETION DATE : 07/78 - 12/80 : FY79
TASK CODE=C822A-S1T052 **EPA=R806003 ** (GRANT)

EPA OFFICER.: AN TAFURI EPA/MERL - CINC 201-321-6679
INVESTIGATOR.: JH WHITELEY WHITELEY JACOBSEN & ASSOCIATES
AH BENEDICT WHITELEY JACOBSEN & ASSOCIATES
MILESTONES...: 02/80 -COMPLETE FIELD EVALUATION
06/80 -COMPLETE FINAL REPORT
09/80 -PUBLISH FINAL REPORT
PROGRAM ID...: (PE-822) POINT SOURCE TECH DEV (WASTEWATER SYS)
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 STORM WATER TREATMENT
ORDIS CODES..: RECN-004949 SSIE-GMA 6013 EPA -R806003 TASK-C822A-S1T052
ORD -RC10B30-5079 MAND-10-01 MAND-30-99
PE -822 LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: THE BASIC OBJECTIVE OF THIS PROJECT IS TO EVALUATE THE PERFORMANCE OF A DUAL DRY-WET WEATHER TREATMENT FACILITY CONSTRUCTED TO ALLEVIATE WET-WEATHER FLOW BYPASSING CAUSED BY EXCESSIVE INFILTRATION/INFLOW FROM THE CLATSKANIE SANITARY SEWERAGE SYSTEM. THE FACILITY HAS BEEN DESIGNED AND CONSTRUCTED TO HANDLE A FLOW RANGE OF 0.5 MGD AVERAGE DRY WEATHER FLOW TO 1.25 MGD WET WEATHER FLOW. BOTH WET AND DRY-WEATHER FLOW TREATMENT IS PROVIDED FOR IN THE SAME UNITS AND CONSISTS OF EITHER EXTENDED AERATION, CONVENTIONAL ACTIVATED SLUDGE, OR CONTACT STABILIZATION FOR DRY WEATHER PERIODS. AN AERATED GRIT TANK AND COMMINUTOR WILL PROVIDE PRELIMINARY TREATMENT FOLLOWED BY A PRIMARY CLARIFIER WHICH MAY ACT AS A SEDIMENTATION TANK DURING DRY WEATHER OR A DISSOLVED AIR FLOTATION TANK DURING WET WEATHER. THE EFFLUENT WILL THEN BE CONVEYED TO THE "VARIABLE-MODED" AERATION CONTACT TANK FOR BIOLOGICAL TREATMENT AND THENCE TO THE "VARIABLE-MODED" AERATION CONTACT TANK FOR BIOLOGICAL TREATMENT AND THENCE TO A SECONDARY CLARIFIER. CHLORINATION IS PROVIDED PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE PERFORMANCE EVALUATION WILL INCLUDE THE OVERALL PLANT EFFICIENCY AS WELL AS THE EFFICIENCY OF THE INDIVIDUAL TREATMENT UNITS. BASED ON THESE EVALUATIONS, DESIGN CRITERIA WILL BE DEVELOPED TO ALLOW FOR LARGER SCALE PLANTS. CAPITAL AND OPERATING COST DATA WILL BE INCLUDED AND UTILIZED TO COMPARE THE COST EFFECTIVENESS OF THE DUAL TREATMENT VERSUS OTHER CONTROL OPTIONS SUCH AS INFILTRATION/INFLOW CORRECTION, STORAGE AND/OR SEPARATE TREATMENT.

*PROJECT: 001980-TECHNIQUES FOR THE MEASUREMENT OF AEROSOL CARBON CONTENT

STARTING/ COMPLETION DATE : 10/76 - 05/80 : FY79
TASK CODE=G833D-EB-012 **EPA=R806005 ** (GRANT)

EPA OFFICER.: C SAWICKI — EPA/ESRL - RTP
INVESTIGATOR.: ES MACIAS — WASHINGTON UNIV — 919-541-3133 CHEM DEPT
MILESTONES...: 05/80 -DEVELOPMENT OF A COMPREHENSIVE SET OF TECHNIQUES TO QUANTITATIVEL
PROGRAM ID...: (PE-833) INSTRUMENTATION & MEASUREMENTS
FINAL OUTPUT.: DEVELOPMENT OF COMPREHENSIVE SET OF TECHNIQUES TO QUANTITATIVELY DETERMINE AMBIENT CONCENTRATION OF ATMOSPHERIC CARBON.
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: GRALE TECHNIQUE SUCCESSFULLY USED FOR ANALYSIS OF CARBON AND OTHER LIGHT ELEMENTS COLLECTED ON TISSUQUARTZ FILTERS AND HAS SHOWN PROMISE IN PRELIM TESTS FOR ANALYZING THIN TEFLON FILTERS.

ORDIS CODES..:			
RECN-001980	SSIE-GMA 2717 3	EPA -R806005	TASK-G833D-EB-012
ORD -RG10B30-1079	MAND-10-02	PE -833	
	LABT-EPE		

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — ACCESS-PUBLIC — DATA-UPDATED — UPDATED- JUL-SEP 79

ABSTRACT.....: OBJECTIVE: THE RESEARCH IS FOCUSSED ON THE DEVELOPMENT OF INSTRUMENTS AND TECHNIQUES FOR ANALYZING CARBONACEOUS AEROSOLS WITH HIGH ACCURACY AND IN MORE DETAIL THAN IS PRESENTLY POSSIBLE. THE RESEARCH EFFORT WILL CONCENTRATE ON THE STUDY OF ATMOSPHERIC PARTICLES LESS THAN A FEW MICROMETERS IN DIAMETER. APPROACH: THE TOTAL CARBON CONTENT WILL BE DETERMINED BY THE GAMMA-RAY ANALYSIS OF LIGHT ELEMENTS (GRALE) TECHNIQUE. THE ELEMENTAL CARBON FRACTION WILL BE DETERMINED BY REFLECTANCE ANALYSIS AND ALTERNATIVELY DIFFERENTIAL HEATING FOLLOWED BY GRALE ANALYSIS, AND THE ORGANIC CARBON BY THERMAL EVOLUTION AND ALTERNATIVELY SOLVENT EXTRACTION OF ORGANICS FOLLOWED BY A METHOD FOR TOTAL ORGANIC CARBON. RESULTS TO DATE: THE GRALE TECHNIQUE HAS BEEN SUCCESSFULLY USED FOR THE ANALYSIS OF CARBON AND OTHER LIGHT ELEMENTS COLLECTED ON TISSUQUARTZ FILTERS AND HAS SHOWN PROMISE IN PRELIMINARY TEST FOR ANALYZING THIN TEFLON FILTERS.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R806009-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

ATMOSPHERIC EMISSIONS FROM ASPHALT PRODUCTS

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Gerald L. Simard, Associate Professor
Chemical Engineering Department

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Maine at Orono
Orono, Maine 04473

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of the proposed project is to determine whether asphalt products under urban conditions present a problem in setting the types and levels of acceptable atmospheric contaminants. Asphalt is a very widely distributed construction material. In use, it is exposed to sunlight, air, moisture and a broad range of temperatures. Photochemical reactions with oxygen and moisture logically occur, and together with volatile products can be of environmental concern. Under simulated urban conditions, a laboratory study will be made to determine if an environmental problem exists. Emissions from a typical asphalt will be collected and analyzed to determine emission rates. Initial work will be to develop analytical techniques. If emission is found significant, the analytical methods developed will be applied in a subsequent proposal to examine a broad spectrum of asphalt types and histories.

*PROJECT: 004401-REMOVAL OF TOXIC SUBSTANCES FROM WASTEWATERS BY INTEGRATED BIOLOGICAL-ACTIVATED CARBON TREATMENT
STARTING/ COMPLETION DATE : 09/78 - 06/82 : FY79
TASK CODE=C821B-5TBE15 **EPA=R806030 ** (GRANT)

EPA OFFICER.: JJ WESTRICK EPA/MERL - CINC 513-684-7652
INVESTIGATOR.: WJ WEBER UNIV OF MICHIGAN SCH OF ENG
MILESTONES...: 09/80 -INTERIM REPORT ON FIRST TWO YEARS
PROGRAM ID...: (PE-821) URBAN SYSTEMS & TOXICS RESIDUAL MANAGEMENT
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-41 DAA FOR WATER ENFORCEMENT
20-11 DAA FOR WATER PLANNING AND STANDARDS
20-12 DAA FOR WATER PROGRAM OPERATIONS

ORDIS CODES..:	RECN-004401	SSIE-GMA 5670	EPA -R806030	TASK-C821B-5TBE15
	ORD -RC10830-5079	MAND-10-01	MAND-20-41	
	MAND-20-11	MAND-20-12	PE -821	
	LABT-EET			
PROJ STATUS..:	ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: THE PROPOSED WORK WILL FOCUS ON INTEGRATION OF BIOLOGICAL AND CARBON ADSORPTION TREATMENT PROCESSES TO YIELD A SYSTEM WHICH IS CAPABLE OF COST EFFECTIVE REMOVAL OF TOXIC SUBSTANCES FROM MUNICIPAL AND INDUSTRIAL WASTEWATERS. SPECIFICALLY, THE PROPOSED RESEARCH WOULD INVESTIGATE THE FEASIBILITY, EFFECTIVENESS, AND CRITICAL CONTROL PARAMETERS ASSOCIATED WITH ADDITION OF ACTIVATED CARBON TO CONVENTIONAL ACTIVATED SLUDGE SYSTEMS TO ACCOMPLISH TOXIC SUBSTANCE REMOVAL. CRITICAL PARAMETERS THAT AFFECT REMOVAL OF TOXIC SUBSTANCES IN SUCH APPLICATIONS WILL BE INVESTIGATED, INCLUDING: SLUDGE AGE; MIXED-LIQUOR SUSPENDED SOLIDS; ORGANIC COMPOSITION AND CONCENTRATION OF THE WASTE; OF TOXIC SUBSTANCES; COMPETITIVE INTERACTIONS OF ORGANIC COMPOUNDS; TYPE AND CONCENTRATION OF ACTIVATED CARBON; AND, INTERACTIVE BIOLOGICAL OXIDATION AND ADSORPTION PROCESSES.

*PROJECT: 004414-EVALUATION OF ACTIVATED BIO-FILTER WASTEWATER TREATMENT PROCESS AT HELENA, MONTANA

STARTING/ COMPLETION DATE : 09/78 - 01/81 : FY79
TASK CODE=C822B-3D209 **EPA=R806047 ** (GRANT)

EPA OFFICER.:	RC BRENNER	EPA/MERL - CINC	513-684-7657
INVESTIGATOR.:	K RAKNESS	M & I INC	
	R NISBET	HELENA CITY PUB. UTIL. DIV	

MILESTONES...: 12/78 -DATA COLLECTION INITIATED
02/79 -HALF-DESIGN LOADING EVALUATION COMPLETED
07/79 -INTERMEDIATE LOADING EVALUATION COMPLETED
02/80 -FULL-DESIGN LOADING EVALUATION COMPLETED
08/80 -FINAL REPORT SUBMITTED TO EPA PROJECT OFFICER
01/81 -FINAL REPORT PUBLISHED

PROGRAM ID...: (PE-822) POINT SOURCE TECH DEV (WASTEWATER SYS)
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: DATA COLLECTION COMPLETED. PERFORMANCE RESULTS IN THIS PHASE WERE EXCELLENT.

ORDIS CODES..:	RECN-004414	SSIE-GMA 5580	EPA -R806047	TASK-C822B-3D209
	ORD -RC10830-1079	MAND-10-01	PE -822	
		LABT-EET		

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE PRIMARY OBJECTIVE OF THIS PROJECT IS TO DEVELOP OPERATING AND PERFORMANCE INFORMATION FOR THE ACTIVATED BIO-FILTER (ABF) PROCESS LOADED AT THE MANUFACTURER'S RECOMMENDED DESIGN LOADING CONDITIONS DURING THE MOST CRITICAL PERFORMANCE PERIOD OF THE YEAR, WINTER OPERATION. OTHER PROJECT OBJECTIVES ARE TO DETERMINE THE RELATIVE CAPABILITIES OF THE FIRST-STAGE BIO-CELL TOWER AND THE SECOND-STAGE SHORT-TERM AERATION BASIN IN SHARING THE ORGANIC LOADS TO THE ABF SYSTEM AND TO DOCUMENT SYSTEM ENERGY REQUIREMENTS. APPROACH: THE RESEARCH APPROACH IS TO OPERATE THE ABF SYSTEM UNDER THREE DIFFERENT LOADING CONDITIONS: HALF-DESIGN LOAD (CURRENT PLANT LOAD), INTERMEDIATE LOAD, AND FULL-DESIGN LOAD. AN ADEQUATE EVALUATION TIME PERIOD FOR EACH OPERATING CONDITION IS PLANNED TO ENSURE SYSTEM ACCLIMATION IS ACHIEVED AT A CHANGED LOADING CONDITION AND TO DETERMINE SYSTEM STABILITY AT THAT LOADING CONDITION. DURING EACH LOADING CONDITION, PLANT PERFORMANCE, OPERATING CHARACTERISTICS, AND ENERGY REQUIREMENTS WILL BE DOCUMENTED BUT THE MAJOR EMPHASIS WILL BE TO OPERATE THE SYSTEM SO AS TO OPTIMIZE SYSTEM BOD AND SUSPENDED SOLIDS REMOVAL CAPABILITIES. RESULTS TO DATE: DATA COLLECTION UNDER EXISTING PLANT LOADING CONDITIONS (HALF-DESIGN LOAD) WAS COMPLETED AT THE END OF FEBRUARY 1979 AS SCHEDULED. PERFORMANCE RESULTS IN THIS PHASE WERE EXCELLENT WITH AVERAGE EFFLUENT BOD AND SUSPENDED SOLIDS CONCENTRATIONS FOR THE 3-MONTH PERIOD OF 15 MG/L (91% REMOVAL) AND 10 MG/L (92% REMOVAL), RESPECTIVELY. THIS EFFLUENT QUALITY WAS ATTAINED WITH AN AVERAGE FIRST-STAGE BIO-CELL ORGANIC LOADING OF 91 LB BOD/DAY/1000 CUBIC FT (1.5 KG/DAY/CUBIC M) AND AN AVERAGE SECOND-STAGE AERATION TANK NOMINAL DETENTION TIME OF 1.8 HR.

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*PROJECT: 001686-AIRBORNE SOLAR RADIATION MEASUREMENT FOR STATE

STARTING/ COMPLETION DATE : 08/78 - 06/79 : FY78
TASK CODE=G603A-AA-134 **EPA=R806048-01 ** (GRANT)

EPA OFFICER.: F POOLER EPA/ESRL - RTP
INVESTIGATOR.: BA ALBRECHT PENNSYLVANIA STATE UNIV EARTH & MINERAL SCI/METEOR DEPT
MILESTONES...: 08/78 -COMPLETE FIELD MEASUREMENTS
11/78 -MEASURED DATA AVAILABLE TO OTHER INVESTIGATORS
06/79 -REPORT ON RADIANT ENERGY BALANCES
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
FINAL OUTPUT.: RADIATION DATA FOR METEOROLOGICAL CONDITIONS FOUND &
ANALYSES OF BOUNDARY LAYER RADIATION BALANCES
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: FIELD WORK PERFORMED 8/78
ORDIS CODES..: RECN-001686 SSIE-GMA 4916 EPA -R806048-01 TASK-G603A-AA-134
ORD -RG10830-1078 MAND-10-02 PE -603
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: THIS TASK IS PART OF A LARGE PROGRAM TO DETERMINE TRANSPORT, TRANSFORMATION, AND REMOVAL PROCESSES AND RATES AFFECTING ATMOSPHERIC CONCENTRATIONS OF SULFUR COMPOUNDS. INITIAL EMPHASIS IS ON STUDIES OF DEFINABLE PLUMES OUT TO TIMES AND DISTANCES OF 24 HRS. AND 500 KM, RESPECTIVELY. MEASUREMENTS OF SOLAR AND LONGWAVE (THERMAL) RADIATION WILL BE MADE USING UPWARD AND DOWNWIND FACING SENSORS TO CHARACTERIZE THE RADIANT FLUXES AND FLUX DIVERGENCE WHICH ARE FUNDAMENTAL PARAMETERS AFFECTING BOUNDARY LAYER STRUCTURE. OUTPUT OF THIS TASK WILL BE RADIATION DATA FOR A VARIETY OF METEOROLOGICAL CONDITIONS ENCOUNTERED DURING THE STUDY PERIOD, AND ANALYSES OF THE BOUNDARY LAYER RADIATION BALANCES.

*PROJECT: 001734-STUDIES OF PLANETARY BOUNDARY LAYER

STARTING/ COMPLETION DATE : 08/78 - 03/81 : FY78
TASK CODE=G603A-AB-05 **EPA=R806048-01 ** (GRANT)

EPA OFFICER.: FS BINKOWSKI EPA/ESRL - RTP
INVESTIGATOR.: AK BLACKADAR PENNSYLVANIA STATE UNIV EARTH & MINERAL SCI/METEOR DEPT
DW THOMSON PENNSYLVANIA STATE UNIV EARTH & MINERAL SCI/METEOR DEPT
MILESTONES...: 09/80 -FINAL REPORT
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
MANDATE......: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001734 SSIE-GMA 4914 EPA -R806048-01 TASK-G603A-AB-05
ORD -RG10830-1078 LABN-G603A-AB-19 MAND-10-02
PE -603 LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: THIS STUDY OF THE PLANETARY BOUNDARY LAYER (PBL) WILL INCLUDE FURTHER DEVELOPMENT OF NEW TREATMENTS OF THE CONVECTIVE MIXED LAYER, THE SURFACE ENERGY BUDGET AND THE SURFACE FLUX OF A POLLUTANT. A SECOND PART OF THE STUDY WILL BE A MULTI-PLATFORM FIELD STUDY OF THE (PBL).

*PROJECT: 004796-BOUNDARY LAYER MODEL IMPROVEMENT AND VALIDATION

STARTING/ COMPLETION DATE : 00/79 - 06/80 : FY79
TASK CODE=G603A-AA-134 **EPA=R806048-01S2** (GRANT)

EPA OFFICER.: F BINKOWSKI — EPA/ESRL - RTP — 919-541-4524
INVESTIGATOR.: BA ALBRECHT — PENNSYLVANIA STATE UNIV — EARTH & MINERAL SCI/METEOR DEPT
MILESTONES...: 06/80 -REPORT ON BOUNDARY LAYER MODEL
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
FINAL OUTPUT.: REPORT ON BOUNDARY LAYER MODEL
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: MEASUREMENTS MADE AND ANALYSES BEGUN.
ORDIS CODES..: RECN-004796 SSIE-GMA 5983 EPA -R806048-01S2 TASK-G603A-AA-134
ORD -RG10830-1079 MAND-10-02 PE -603
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: 1. DETERMINE EFFECTS OF AMBIENT AND PLUME AEROSOL UPON RADIANT FLUXES (SOLAR AND TERRESTRIAL) FOR TENNESSEE PLUME STUDY. APPROACH: 1. MEASURE RADIANT FLUXES FROM AIRCRAFT ALONG WITH AEROSOL DATA. 2. ANALYZE DATA. RESULTS TO DATE: MEASUREMENTS MADE AND ANALYSES BEGUN.

*PROJECT: 004419-REMOVING ORGANIC CONTAMINANTS FROM DRINKING WATER - A PILOT PLANT STUDY

STARTING/ COMPLETION DATE : 09/78 - 12/81 : FY79
TASK CODE=C824A-01T42 **EPA=R806052-01 ** (GRANT)

EPA OFFICER.: J DEMARCO — EPA/MERL - CINC — 513-684-7282
INVESTIGATOR.: PR WOOD — DADE CNTY DEPT OF PUB HLTH
RA MORGAN — DADE CNTY DEPT OF PUB HLTH
FR ALDRIDGE — DADE CNTY DEPT OF PUB HLTH
L KAPLAN — DADE CNTY DEPT OF PUB HLTH
DH WADDELL — MIAMI DADE WAT & SEW AUTH

PROGRAM ID...: (PE-824) DRINK WATER TREATMENT & GROUND WATER PROT

MANDATE......: 10-09 REORGANIZATION PLAN # 3
10-03 TOXIC SUBSTANCES CONTROL ACT
10-05 RESOURCE CONSERVATION AND RECOVERY ACT
10-02 CLEAN AIR ACT

CURR. RESULTS: INVESTIGATION OF FOUR ACTIVATED CARBONS COMPLETED. CARBON SELECTED FOR NEXT PHASE OF PILOT COLUMN STUDIES.

ORDIS CODES..: RECN-004419 SSIE-GMA 5678 EPA -R806052-01 TASK-C824A-01T42
ORD -RC10B30-1079 MAND-10-09 MAND-10-03
MAND-10-05 MAND-10-02 PE -824
LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVES: A 100 GAL. PER MINUTE PILOT PLANT STUDY TO DEVISE FEASIBLE AND ECONOMIC METHODOLOGY FOR FULL SCALE PLANT REMOVAL OF EXISTING ORGANIC CONTAMINANTS FROM GROUND WATER AND/OR PREVENT DEVELOPMENT OF POTENTIAL CARCINOGENS IN THE PUBLIC WATER SUPPLIES IN DADE COUNTY, FLA. THE FINDINGS WILL ALSO BE APPLICABLE TO OTHER AREAS. APPROACH: VARIOUS TYPES OF GRANULAR ACTIVATED CARBON WILL BE STUDIED FOR EFFECTIVENESS IN REMOVING PRECURSOR SUBSTANCES WHICH REACT WITH CHLORINE TO PRODUCE POTENTIAL CARCINOGENS, REMOVING EXISTING CONTAMINANTS PRESENT IN THE GROUND WATER, AND CONTAMINANTS FORMED IN THE PLANT PROCESS. OPTIMUM PLACEMENT OF CARBON ADSORBERS, CARBON LIFE AND REGENERATION, EFFECT OF OZONE, ULTRAVIOLET LIGHT AND BACTERIA WILL BE STUDIED. IN ADDITION, LOWER COST METHODS OF MINIMIZING CONTAMINANTS BY COAGULATION AND DISINFECTION MODIFICATIONS WILL BE STUDIED. RESULTS TO DATE: INVESTIGATION OF FOUR ACTIVATED CARBONS USING PARALLEL PILOT COLUMNS HAS BEEN COMPLETED. THESE CARBONS WERE COMPARED FOR ADSORPTION OF TOC, THMFP, HALOGENATED AND NON-HALOGENATED PURGEABLES. BASED ON RESULTS FROM THESE COMPARISONS A CARBON WAS SELECTED FOR THE NEXT PHASE OF PILOT COLUMN STUDIES.

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U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R 806056-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT Investigation of the Effectiveness of Surface-Active Agents in Combating Open-Ocean Oil Spills

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. J. R. Gould, Project Director, American Petroleum Institute
R. W. Neal, Principal Investigator, JBF Scientific Corporation
Dr. C. D. McAuliffe, Analytical Chemist , Chevron Oil Field Research Co.
R. A. Brown, Analytical Chemist, Exxon Research & Eng. Co.

NAME AND ADDRESS OF APPLICANT INSTITUTION

American Petroleum Institute
2101 L Street, Northwest
Washington, D. C. 20037

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of the project is to determine how effective certain surface-active agents, or dispersants, are in accelerating the processes which break up and dissipate an oil spill in the open ocean. Specifically, such agents cause an oil slick to be divided into droplets which are more readily evaporated in the case of lighter fractions and more readily biodegraded in the case of heavier fractions.

The approach taken will be to generate carefully controlled oil spills in a selected open-ocean area, apply dispersants, and take a series of water samples at various depths in and below the oil slicks. The water samples will be analyzed to determine the amount of hydrocarbons of various molecular weights that are present as a function of time. Two types of crude oils will be used and three types of EPA-approved dispersants will be tested. Strict measures will be taken to assure that no significant ecological damage results from the tests.

*PROJECT: 001050-STUDY OF MICROBIAL AEROSOLS EMITTED FROM WATER RECLAMATION PLANT

STARTING/ COMPLETION DATE : 07/78 - 08/80 : FY78
TASK CODE=D607A-051 **EPA=R806062-01 ** (GRANT)

EPA OFFICER.: W JAKUBOWSKI EPA/HERL - CINC
INVESTIGATOR.: KF FANNIN I I T RES INST
JD FENTERS I I T RES INST
MILESTONES ...: 07/79 -ANNUAL REPORT
08/80 -FINAL REPORT - MICROORGANISM LEVELS IN AIR FROM WWTP
PROGRAM ID...: (PE-607) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 AEROBIOLOGY

ORDIS CODES..:	RECN-001050	SSIE-GMA 5144	EPA -R806062-01	TASK-D607A-051
	ORD -RD10830-5078	LABN-D607A-010	MAND-10-01	
	MAND-30-99	PE -607		LABT-OHR
PROJ STATUS..:	PROJECT-ACTIVE	CATEGORY-RESEARCH	DATA-ORIGINAL	UPDATED- OCT-DEC 77
		ACCESS-PUBLIC		

ABSTRACT.....: THE OBJECTIVE OF THIS STUDY IS TO DETERMINE THE OCCURRENCE OF SELECTED MICROORGANISMS IN AEROSOLS IN THE VICINITY OF THE O'HARE WATER RECLAMATION PLANT (OWRP) LOCATED IN DES PLAINES, ILLINOIS, DURING THE FALL AND SPRING MONTHS PRECEDING AND FOLLOWING INITIATION OF OPERATIONS. THE STUDY WILL BE CONDUCTED IN ORDER TO OBTAIN DATA ON THE MICROBIOLOGICAL CONTENT OF AEROSOLS FROM MID AUGUST TO MID NOVEMBER AND FROM MID-MARCH TO MID-JUNE. BOTH DAY AND NIGHT SAMPLES WILL BE TAKEN AT FOUR SITES TO DETERMINE BACTERIAL AND COLIPHAGE CONCENTRATIONS AND AT TWO SITES TO ESTIMATE THE CONCENTRATIONS OF ANIMAL VIRUSES. ONE SITE WILL BE LOCATED UPWIND AND THE REMAINING SITES DOWNWIND OF THE WASTEWATER AERATION TANKS, BASED UPON METEOROLOGICAL CONDITIONS DURING THE SAMPLING PERIOD. DURING EACH SAMPLING TRIAL, AIR SAMPLES WILL BE COLLECTED WITH SLIT SAMPLERS, MULTISTAGED IMPACTORS, AND LARGE VOLUME AIR SAMPLERS. DEPENDING UPON THE SPECIFIC ASSAY PROCEDURE THE MICROORGANISMS WILL BE ENUMERATED EITHER BY DIRECT COLONY COUNT OR ESTIMATES BY THE MOST PROBABLE NUMBER METHOD.

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*PROJECT: 001801-EXPERIMENTAL STUDY OF AEROSOL FORMATION MECHANISM IN A CONTROLLED
              ATMOSPHERE
                   STARTING/ COMPLETION DATE : 08/78 - 08/81 :   FY78
                   TASK CODE=G603A-AC-15  **EPA=R806070-01  ** (GRANT)
  EPA  OFFICER : JL DURHAM                 EPA/ESRL - RTP
  INVESTIGATOR.: DL FOX                    UNIV OF NORTH CAROLINA          SCH OF PUBLIC HLTH
  MILESTONES...: 08/79 -COMPLETE WORK ON CYCLOHEXENE, NOX, SULFUR DIOXIDE SYSTEM
  PROGRAM ID...: (PE-603 )          HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
  MANDATE......: 10-02     CLEAN AIR ACT
  ORDIS CODES..: RECN-001801          SSIE-GMA  4903        EPA -R806070-01       TASK-G603A-AC-15
                 ORD -RG10B30-1078    MAND-10-02            PE  -603
                                      LABT-EPE

  PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH     DATA-ORIGINAL         UPDATED-  OCT-DEC 77
                                      ACCESS-PUBLIC
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ABSTRACT.....: AN OUTDOOR CHAMBER WILL BE USED TO INVESTIGATE AEROSOL FORMATION PROCESSES IN SIMULATED URBAN ENVIRONMENTS. EXPERIMENTAL SYSTEMS WILL BE STUDIED TO ELUCIDATE THE INTERACTION OF SULFUR DIOXIDE WITH HYDROCARBON-OXIDES OF NITROGEN SYSTEMS THAT FORM LIGHT SCATTERING AEROSOLS. THE EXPERIMENTAL APPROACH WILL BE (1) TO ESTABLISH THE INITIAL HYDROCARBON (HC) CONCENTRATION AND THE HC/NOX RATIO FOR THE SUBSEQUENT SULFUR DIOXIDE EXPERIMENTS AND CHARACTERIZE THE ORGANIC AEROSOL, (2) GENERATE AND CHARACTERIZE THE AEROSOL FOR THE HC-NOX-SULFUR DIOXIDE SYSTEM FOR CONDITIONS FAVORABLE TO HOMOGENEOUS PATHWAYS, AND (3) FOR CONDITIONS FAVORABLE TO HETEROGENEOUS PATHWAYS.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R806072-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Marine Ecosystems Research Laboratory (MERL)

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. Michael E. Q. Pilson, Principal Investigator

See attached sheet

NAME AND ADDRESS OF APPLICANT INSTITUTION

Marine Ecosystems Research Laboratory
Graduate School of Oceanography
University of Rhode Island
Kingston, RI 02881

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

1) Objectives: The primary objectives of MERL are:

a) To design, develop and operate experimental marine ecosystems.
b) To investigate the behavior of these systems and the organisms which live in them, and from these studies to examine the feasibility of using large microcosms to improve our understanding of the behaviour of natural systems.
c) To study the effects of various perturbants on individual species, species-species interactions, and on properties of the whole system.
d) To investigate the geochemical and biogeochemical behaviour of various elements and organic compounds in these complex enclosed ecosystems.

2) Approach: Marine microcosms are maintained in tanks outdoors under natural sunlight. Each tank is 5 1/2m high, 2m in diameter and contains 13 m^3 of water. In the bottom is placed about one ton of sediment in a layer 30 cm deep. An attempt is made to collect the sediment so as to minimize damage to the benthic fauna. The tanks are filled with water from Narragansett Bay, and this water also flows through the tank to produce a residence time of about 30 days.

3) Current Plans: Biological and chemical observations will be made on planktonic and benthonic components of the ecosystems, to compare with each other and with Narragansett Bay. Control tanks are untreated; other tanks will have chronic inputs of No. 2 fuel oil or radioactive tracers.

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U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO.*(Do not use this space)*

SSIE

EPA R806079-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Relationship Between Black Mangrove Forests and EStuarine Waters

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Frank G. Nordlie, Professor, Department of Zoology and Center for Wetlands

NAME AND ADDRESS OF APPLICANT INSTITUTION

Center for Wetlands, University of Florida
Phelps Lab
Gainesville, Florida 32611

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Exports and imports of dissolved and particulate organic matter are being measured from selected black mangrove forests in the west coast of Florida. All indications from our preliminary results suggest net export of organic matter from black mangroves to estuarine waters. Organic matter output during the period of study was more closely associated with rainfall events than with tides. Later in th e year when tidal cycles show greater amplitudes, we expect an increase in the relative role of the tides.

Our data should be significant to the issues concerning impoundment and development of coastal wetland ecosystems.

*PROJECT: 004413-EVALUATION OF DEEP SHAFT BIOLOGICAL WASTEWATER TREATMENT PROCESS

STARTING/ COMPLETION DATE : 10/78 - 12/81 : FY79
TASK CODE=C822B-3D205 **EPA=S806081 ** (GRANT)

EPA OFFICER.: RC BRENNER — EPA/MERL - CINC — 513-684-7657
INVESTIGATOR.: DE SCHWINN — ITHACA WATER/SEWER DIV — DEPT OF PUBLIC WORKS
DE SCHWINN — STEARNS & WHELER
DF STORRIER — STEARNS & WHELER
RO DINGMAN — ITHACA WATER/SEWER DIV — DEPT OF PUBLIC WORKS

MILESTONES...: 07/79 -CONSTRUCTION COMPLETED, SYSTEM STARTUP INITIATED
01/81 -DATA COLLECTION COMPLETED
07/81 -FINAL REPORT SUBMITTED TO EPA PROJECT OFFICER
12/81 -FINAL REPORT PUBLISHED

PROGRAM ID...: (PE-822) POINT SOURCE TECH DEV (WASTEWATER SYS)
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: DRILLING OF SHAFT AND INSTALLATION OF CASING COMPLETE. INSTALLATION OF ABOVE-GROUND EQUIPMENT IN PROGRESS.

ORDIS CODES..: RECN-004413 SSIE-GMA 5579 EPA -S806081 TASK-C822B-3D205
ORD -RC10B30-1079 MAND-10-01 PE -822
LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE OBJECTIVES OF THIS PROJECT ARE TO EVALUATE THE EFFICIENCY OF THE DEEP SHAFT PROCESS IN TREATING MUNICIPAL, WASTEWATER UNDER VARIOUS CONDITIONS AND COMPARE IT TO OTHER ACTIVATED SLUDGE SYSTEMS TO: (1) DEFINE CRITICAL DESIGN AND OPERATING PARAMETERS, (2) COMPARE SOLIDS SEPARATION CHARACTERISTICS UTILIZING FLOTATION AND SEDIMENTATION TANKS, AND (3) PROVIDE CAPITAL AND OPERATING COST ESTIMATES TO APPLY DEEP SHAFT TECHNOLOGY. APPROACH: A 430-FT DEEP, 18-IN. DIAMETER DEEP SHAFT PILOT DEMONSTRATION SYSTEM WILL BE INSTALLED ON THE GROUNDS OF THE ITHACA WASTEWATER TREATMENT PLANT AND UTILIZED TO TREAT A SIDESTREAM (100,000-200,000 GALLONS PER DAY) OF ITHACA MUNICIPAL WASTEWATER. THE FLOTATION AND GRAVITY CLARIFICATION MODES OF FINAL LIQUID/SOLIDS SEPARATION WILL EACH BE EMPLOYED ABOUT 9 MONTHS. PROCESS PERFORMANCE IN BOTH MODES WILL BE EVALUATED UNDER VARYING CONDITIONS OF DIURNAL FLOW, ORGANIC LOADING, TEMPERATURE, AND CHEMICAL ADDITION. RESULTS TO DATE: DRILLING OF THE SHAFT AND INSTALLATION OF THE CASING IS COMPLETE. INSTALLATION OF ABOVE-GROUND EQUIPMENT INCLUDING CLARIFICATION SYSTEMS, INSTRUMENTATION, PUMPS AND PIPING, AND THE PILOT BUILDING IS IN PROGRESS. PILOT SYSTEM STARTUP IS SCHEDULED FOR JULY 1979.

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*PROJECT: 004653-ASSESSMENT OF THE POTENTIAL IMPACTS OF PROPOSED ENERGY DEVELOPMENT ON
                 WATER RESOURCES OF NORTHERN CHEYENNE INDIAN RESERVATION, MON
                      STARTING/ COMPLETION DATE : 07/78 - 07/80 :   FY79
                      TASK CODE=B623B-706    **EPA=R806082-01  ** (GRANT)
  EPA  OFFICER.: JF MARTIN                  EPA/IERL - CINC
  INVESTIGATOR.: WW WOESSNER                NORTHERN CHEYENNE TRIBE
                 R  MONTEAU                 NORTHERN CHEYENNE TRIBE
                 TJ OSBORNE                 NORTHERN CHEYENNE TRIBE
                 EL HEFFERN                 NORTHERN CHEYENNE TRIBE
  MILESTONES...: 07/80 -FINAL REPORT ON NORTHERN CHEYENNE ENERGY IMPACT ASSESSMENT
  PROGRAM ID...: (PE-623 )          EXTRACTION AND PROCESSING TECHNOLOGY
  MANDATE......: 10-99     (NON-NUCLEAR ENERGY) PL 93-577
                 30-99     HYDROLOGY - OIL SHALE
  ORDIS CODES..: RECN-004653        SSIE-GMA  5940       EPA -R806082-01       TASK-B623B-706
                 ORD -RB10B30-3079  MAND-10-99           MAND-30-99
                 PE  -623                                LABT-EET

  PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH    DATA-UPDATED          UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE PROJECT WILL INCREASE THE DATA BASE ON THE RESERVATION REGARDING WATER QUALITY AND POTENTIAL IMPACTS OF COAL MINING. APPROACH: FIELD MONITORING OF THREE PRIORITY SITES ON THE RESERVATION WILL SUPPLY INFORMATION FOR A NEW AUTOMATIC DATA STORAGE AND RETRIEVAL SYSTEM.

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Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)

SSIE

EPA R806083-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

The Environmental Impact of Energy-Related Organic Compounds on Aquatic Organisms

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Robert M. Carlson, Professor (Principal Investigator)
Ronald Caple, Professor
Department of Chemistry

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Minnesota
Duluth, Minnesota 55812

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The proposed work will attempt to assess the potential hazard to aquatic organisms of exposure to sediment, suspended microparticulates, and water known to contain energy related organic compounds. The program will be approached in the following ways: 1) The organic content of extracts of tissue, microparticulates (e.g., fly ash, sediment, etc.) and water from areas impacted by energy production facilities that use coal as their fuel source will be compared with similar extracts from areas not subject to such stress. 2) Biological systems (ie., fish, invertebrates, bacteria) will be evaluated to determine if there are adverse effects such as toxicity, bioaccumulation, or mutation upon exposure to PAH's, polycyclic aromatic phenols, and azaarenes. 3) The chemical and biological properties of photo oxidation and chlorination products of energy-related organic compounds will be investigated. 4) The effect of adsorption of the organic compound on particulates in mediating biological response and chemical reactivity will also be studied.

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*PROJECT: 004400-PRESENCE OF PRIORITY POLLUTANTS IN SEWAGE AND THEIR REMOVAL IN SEWAGE TREATMENT PLANTS
STARTING/ COMPLETION DATE : 00/79 - 06/80 : FY79
TASK CODE=C821B-5TAF03 **EPA=R806102-01 ** (GRANT)

EPA OFFICER.: SA HANNAH — EPA/MERL - CINC — 513-684-7651
INVESTIGATOR.: FB DEWALLE — UNIV OF WASHINGTON — SCH OF PUBLIC HLTH & COMM MED
ES CHIAN — UNIV OF WASHINGTON — SCH OF PUBLIC HLTH & COMM MED
PROGRAM ID...: (PE-821) URBAN SYSTEMS & TOXICS RESIDUAL MANAGEMENT
FINAL OUTPUT.: ANALYTICAL PROTOCOL FOR PRIORITY POLLUTANTS
RESULTS OF SURVEY OF 25 TREATMENT PLANT FOR PRIOR. POLL.
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
10-03 TOXIC SUBSTANCES CONTROL ACT
20-11 DAA FOR WATER PLANNING AND STANDARDS
20-12 DAA FOR WATER PROGRAM OPERATIONS
CURR. RESULTS: ANALYTICAL PROTOCOL COMPLETED AND REPORT BEING WRITTEN. SAMPLING AND ANALYTICAL PROCEDURES BEING TESTED AT TWO PLANTS BEFORE BEGINNING MAJOR PLANT SURVEY.

ORDIS CODES..:

RECN-004400	SSIE-GMA 5674	EPA -R806102-01	TASK-C821B-5TAF03
ORD -RC10B30-5079	MAND-10-01	MAND-10-03	
MAND-20-11	MAND-20-12	PE -821	
LABT-EET			

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVES/APPROACH: THE PROPOSED STUDY WILL CONDUCT A SURVEY TO DETECT THE PRESENCE OF PRIORITY POLLUTANTS IN RAW SEWAGE IN MAJOR METROPOLITAN AREAS DURING BOTH THE DRY AND WET SEASON. THE REMOVAL OF THESE POLLUTANTS BY SEDIMENTATION AND BIOLOGICAL DEGRADATION WILL BE ASSESSED BY MONITORING FOR TRACE POLLUTANTS IN PRIMARY AND SECONDARY SEWAGE EFFLUENT. SINCE MANY POLLUTANTS ACCUMULATE IN THE BACTERIAL BIOMASS, ANAEROBIC DIGESTER SLUDGE WILL ALSO BE TESTED FOR PRIORITY POLLUTANTS. EACH SAMPLE WILL BE ANALYZED FOR VOLATILE CHLORINATED HYDROCARBONS USING A PURGING TECHNIQUE. CHLORO- AND NITROBENZENES, BIPHENYLS, ETHERS, NITROSAMINES AND PHTHALATES WILL BE OBTAINED IN THE NEUTRAL/BASE METHYLENE CHLORIDE EXTRACT, WHILE CHLORINATED PHENOLS WILL BE RECOVERED IN THE ACID METHYLENE CHLORIDE EXTRACT. POLYNUCLEAR AROMATIC HYDROCARBONS WILL BE EXTRACTED FROM THE WATER WITH CYCLOHEXANE WHILE PESTICIDES WILL BE RECOVERED WITH HEXANE. ANY PRIORITY POLLUTANT PRESENT ABOVE 1 PPB (1 MICROGRAM L) WILL BE ANALYZED AND QUANTIFIED. RESULTS TO DATE: THE ANALYTICAL PROTOCOL HAS BEEN COMPLETED AND IS BEING WRITTEN UP IN A REPORT. THE SAMPLING AND ANALYTICAL PROCEDURES ARE BEING TESTED ON TWO PLANTS (CONWAY-ATLANTA, GA., AND RENTON-SEATTLE, WA.) TO WORK OUT ANY PROBLEMS BEFORE BEGINNING THE MAJOR PLANT SURVEY.

*PROJECT: 004037-ACADEMY FORUM ON THE DEVELOPMENT OF OCEAN RESOURCES

STARTING/ COMPLETION DATE : 06/78 - 08/79 : FY78
TASK CODE=V625A-01 **EPA=R806115-01 ** (GRANT)

EPA OFFICER.: C HALL EPA/OEET- DAA
INVESTIGATOR.: RR WHITE NATL ACADEMY OF SCI
MILESTONES...: 08/78 -REGIONAL WORKSHOP ON OCEAN RESOURCES (DELAWARE)
09/78 -REGIONAL WORKSHOP ON OCEAN RESOURCES (SEATTLE)
10/78 -REGIONAL WORKSHOP OCEAN RESOURCES (NEW ORLEANS OR GALVESTON)
01/78 -ACADEMY FORUM (WASHINGTON DC)
PROGRAM ID...: (PE-625) HEALTH AND ECOLOGICAL EFFECTS
MANDATE.......: 30-99 OCEANOGRAPHY

ORDIS CODES..:			
RECN-004037	SSIE-GMA 5271	EPA -R806115-01	TASK-V625A-01
ORD -RV10B30-3078	MAND-30-99	PE -625	
	LABT-EET		

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 77
ACCESS-PUBLIC

ABSTRACT.....: SCIENCE AND TECHNOLOGY HAVE OPENED THE OCEANS AS A SOURCE OF ABUNDANT MATERIALS, ENERGY, AND FOOD. OCEAN ENGINEERING TECHNOLOGY AND PROCEDURES, HOWEVER, ARE BECOMING MORE COSTLY AND INCREASINGLY COMPLEX AS THESE ACTIVITIES EXTEND INTO HARSHER AND MORE REMOTE REGIONS, AND CONCERNS MOUNT FOR THE PROTECTION OF THE ENVIRONMENT, THE CONSERVATION OF RESOURCES, AND THE SAFETY OF HUMAN LIFE. THESE CONCERNS HAVE RESULTED IN CONFLICTING AND RESTRICTIVE REGULATORY POLICIES AS WELL AS COUNTERPRODUCTIVE DELAYS FOR ALL CONCERNED. IN AN EFFORT TO FIND NEW WAYS OF COMMUNICATION AMONG THE VARIOUS GROUPS INTERESTED IN THE BROAD TOPIC OF THE DEVELOPMENT OF OCEAN RESOURCES, IT IS PROPOSED THAT THEY BE BROUGHT TOGETHER IN AN ACADEMY FORUM IN REGIONAL WORKSHOPS AND EVENTUALLY IN PLENARY SESSIONS IN WASHINGTON, D.C., AT WHICH TIME THE DISCUSSION CAN BE SHARED WITH REPRESENTATIVES OF GOVERNMENT, INDUSTRY, AND PUBLIC INTEREST GROUPS. THE OBJECTIVES OF THIS ACADEMY FORUM INCLUDE: TO SEEK NEW WAYS FOR CONSTRUCTIVE PARTICIPATION OF SCIENTISTS, SEA TECHNOLOGISTS, AND CITIZENS TO FORMULATE PROGRAMS FOR THE BENEFICIAL UTILIZATION OF OCEANS WHILE PROTECTING THE GOVERNMENT. TO DETERMINE THE LONG- AND SHORT-TERM ISSUES EMERGING FROM THE FURTHER DEVELOPMENT OF OCEAN RESOURCES, AND TO PLACE THESE ISSUES IN SOME ORDER OF PRIORITY.

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*PROJECT: 004422-REMOVAL OF GIARDIA LAMBLIA CYSTS IN DRINKING WATER PLANTS

STARTING/ COMPLETION DATE : 06/79 - 02/81 : FY79
TASK CODE=C824A-01T68 **EPA=R806127 ** (GRANT)

EPA OFFICER.: GS LOGSDON EPA/MERL - CINC 513-684-7345
INVESTIGATOR.: W FOPPE UNIV OF WASHINGTON SCH OF PUBLIC HLTH & COMM MED
MILESTONES...: 06/79 -COMPLETE LAB STUDIES OF UNITS PROCESSES FOR GIARDIA CYSTS REMOVAL
03/80 -COMPLETE FULL SCALE PLANT EVALUATION OF GIARDIA CYSTS REMOVAL
02/81 -REPORT
PROGRAM ID...: (PE-824) DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 20-13 DAA FOR DRINKING WATER
20-R01 EPA REGION I
20-R02 EPA REGION II
20-R07 EPA REGION VII
20-R09 EPA REGION IX
20-R10 EPA REGION X
CURR. RESULTS: PILOT PLANT BUILT AND PLACED IN OPERATION. LAB STUDIES
ON CONCENTRATION AND ENUMERATION UNDERWAY.

ORDIS CODES..: RECN-004422	SSIE-GMA 5585	EPA -R806127	TASK-C824A-01T68
ORD -RC10B30-5079	MAND-20-13	MAND-20-R01	
MAND-20-R02	MAND-20-R07	MAND-20-R09	MAND-20-R10
PE -824		LABT-EET	
PROJ STATUS..: ACTIVE -MULTIYEAR	CATEGORY-RESEARCH	DATA-UPDATED	UPDATED- JUL-SEP 79
	ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: IT IS THE PURPOSE OF THE PROPOSED STUDY TO INVESTIGATE AND DETERMINE THE REMOVAL OF CYSTS OF GIARDIA LAMBLIA, A PATHOGENIC PROTOZOA, IN DRINKING WATER FILTRATION TECHNIQUES EFFECTIVELY REMOVE THE CYSTS AS WELL AS THE SORT OF PROBLEMS THAT COULD OCCUR AND PERMIT CYSTS TO PASS THROUGH FILTERS. APPROACH: THE LABORATORY AND FULL SCALE INVESTIGATION WILL EVALUATE INDIVIDUAL UNIT PROCESSES, SUCH AS SEDIMENTATION, COAGULATION, FILTRATION AND CHLORINATION, FOR THEIR ABILITY TO REMOVE CYSTS. OPERATIONAL CHARACTERISTICS OF EACH PROCESS WILL BE SYSTEMATICALLY VARIED TO STUDY ITS EFFECT ON CYST REMOVAL. TREATMENT CONDITIONS THAT SUCCESSFULLY REMOVE CYSTS AND CONDITIONS THAT FAIL TO REMOVE CYSTS WILL BE REPORTED. RESULTS TO DATE: A PILOT PLANT HAS BEEN BUILT AND PLACED INTO OPERATION. LABORATORY STUDIES ON CONCENTRATION AND ENUMERATION ARE UNDER WAY.

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*PROJECT: 005179-AN HISTORICAL COHORT EPIDEMIOLOGICAL STUDY OF THE HEALTH EFFECTS ON
                 NEWBORNS AND INFANTS OF CLO2 AS A WATER DISINFECTANT
                    STARTING/ COMPLETION DATE : 00/79 - 00/80 :   FY79
                    TASK CODE=D823B-013E   **EPA=R806139-01  ** (GRANT)
  EPA  OFFICER.: R  MIDAY                   EPA/HERL - CINC                 513-684-7461
  INVESTIGATOR.: GS MOORE                   UNIV OF MASSACHUSETTS           PUB HLTH DIV
                 RW TUTHILL                 UNIV OF MASSACHUSETTS           PUB HLTH DIV
                 EJ CALABRESE               UNIV OF MASSACHUSETTS           PUB HLTH DIV
  PROGRAM ID...: (PE-823 )             HEALTH EFFECTS
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
  ORDIS CODES..: RECN-005179         SSIE-GMA  6183      EPA -R806139-01      TASK-D823B-013E
                 ORD -RD10B30-1079   MAND-10-01          PE  -823
                                     LABT-OHR

  PROJ STATUS..: PROJECT-ACTIVE      CATEGORY-RESEARCH   DATA-ORIGINAL        UPDATED-  OCT-DEC 79
                                     ACCESS-PUBLIC
  ABSTRACT.....: OBJECTIVE: CHLORINE DIOXIDE IS A POWERFUL OXIDANT AND CHLORITE, ONE OF THE BY-PRODUCTS OF CLO2
                   DISINFECTION, IS ANOTHER POWERFUL OXIDANT. THE HEALTH EFFECTS OF CLO2 DISINFECTION OF HUMANS HAS
                   NOT BEEN FULLY ASSESSED. THERE IS EVIDENCE THAT PREGNANT MOTHERS, FETUSES IN UTERO, AND NEWBORNS
                   MAY BE AT INCREASED RISK TO OXIDANT STRESS AND ARE LIKELY TO EXHIBIT INCREASED ERYTHROCYTE
                   DESTRUCTION AND/OR METHB FORMATION IN BLOOD CELLS EXPOSED TO CHLORINE DIOXIDE OR CHLORITE. THE
                   OBJECTIVE OF THIS RESEARCH IS TO ASSESS THE EXTENT OF THIS RISK BY AN HISTORICAL EPIDEMIOLOGICAL
                   STUDY ON THESE AT RISK GROUPS IN A POPULATION SERVED BY A WATER SUPPLY DISINFECTED WITH CLO2.

*PROJECT: 003786-A FEASIBILITY STUDY FOR THE MATHEMATICAL MODELING AND CONTROL OF
                 CLADOPHORA IN THE GREAT LAKES
                    STARTING/ COMPLETION DATE : 06/78 - 01/79 :   FY78
                    TASK CODE=N769 -045    **EPA=R806149-01  ** (GRANT)
  EPA  OFFICER.: NA THOMAS                  EPA/ERL - DULUTH
  INVESTIGATOR.: RP CANALE                  UNIV OF MICHIGAN                AEROSPACE ENG DEPT
                 MT AUER                    UNIV OF MICHIGAN                AEROSPACE ENG DEPT
  MILESTONES...: 01/79 -FINAL REPORT:  FEASIBILITY OF MODELING GROWTH OF CLADOPHORA
  PROGRAM ID...: (PE-769 )             GREAT LAKES
  MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
  ORDIS CODES..: RECN-003786         SSIE-GMA  4938      EPA -R806149-01      TASK-N769 -045
                 ORD -RN10B30-1078   MAND-10-01          PE  -769
                                     LABT-EPE

  PROJ STATUS..: PROJECT-ACTIVE      CATEGORY-RESEARCH   DATA-ORIGINAL        UPDATED-  OCT-DEC 77
                                     ACCESS-PUBLIC
  ABSTRACT.....: THE OBJECTIVE OF THE PROPOSED WORK IS TO INVESTIGATE THE FEASIBILITY OF DEVELOPING MATHEMATICAL
                   MODELS FOR CLADOPHORA WHICH CAN BE USED TO PREDICT THE EFFECTIVENESS OF ALTERNATIVE CONTROL
                   MEASURES AND POLICIES. THE APPROACH WILL INVOLVE A COMPREHENSIVE REVIEW OF THE SCIENTIFIC
                   LITERATURE AND VISITS TO LABORATORIES WHERE RESEARCH ON CLADOPHORA IS IN PROGRESS. FURTHERMORE,
                   STUDIES OF CLADOPHORA IN LAKE HURON WILL BE CONDUCTED FOR THE PURPOSE OF DEMONSTRATING FIELD
                   TECHNIQUES AND EVALUATING THE USEFULNESS OF ADDITIONAL WORK. THE STUDIES WILL INCLUDE MEASUREMENTS
                   OF NITROGEN, PHOSPHORUS, AND VITAMINS IN BOTH THE WATER AND PLANT TISSUE. OTHER ECOLOGICAL FACTORS
                   SUCH AS TEMPERATURE AND THE LOCATION OF POINT FIELD DATA WILL BE USED TO CONSTRUCT AN OVERALL
                   MATHEMATICAL MODELING FRAMEWORK FOR CLADOPHORA WHICH CAN BE USED TO PREDICT THE IMPACT OF CONTROL
                   STRATEGIES.
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U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R806149-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT
A Feasibility Study for the Mathematical Modeling and Control of Cladophora in the Great Lakes

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Raymond P. Canale   Professor   Civil Engineering
Martin T. Auer   Water Resources Program

NAME AND ADDRESS OF APPLICANT INSTITUTION

The University of Michigan
Office of Research Adminstration, 222 Res. Admin.
Ann Arbor, Michigan 48105

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of the proposed work is to investigate the feasibility of developing mathematical models for *Cladorphora* which can be used to predict the effectiveness of alternative control measures and policies. The approach will involve a comprehensive review of the scientific literature and visits to laboratories where research on *Cladorphora* is in progress. Furthermore, studies of *Cladorphora* in Lake Huron will be conducted for the purpose of demonstrating field techniques and evaluating to usefulness of additional work. The studies will include measurements of nitrogen, phosphorus, and vitamins in both the water and plant tissue. Other ecological factors such as temperature and the location of point nutrient sources will also be examined. The literature results and field data will be used to construct an overall mathematical modeling framework for *Cladorphora* which can be used to predict the impact of control strategies.

*PROJECT: 004423-PILOT SCALE EVALUATION OF BIOLOGICAL ACTIVATED CARBON FOR REMOVAL OF THM PRECURSORS
STARTING/ COMPLETION DATE : 00/79 - 09/81 : FY79
TASK CODE=C824A-01T69 **EPA=R806157 ** (GRANT)

EPA OFFICER.: K CARSWELL — EPA/MERL - CINC
INVESTIGATOR.: WH GLAZE — NORTH TEXAS STATE UNIV — INST OF APPLIED SCI
PROGRAM ID...: (PE-824) — DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 10-15 SAFE DRINKING WATER ACT
ORDIS CODES..: RECN-004423 — SSIE-GMA 5671 — EPA -R806157 — TASK-C824A-01T69
ORD -RC10830-1079 — MAND-10-15 — PE -824
LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE/APPROACH: THIS PROJECT WILL SEEK TO DETERMINE THE EFFICACY OF OZONE COMBINED WITH ACTIVATED CARBON FILTRATION, THE SO-CALLED BIOLOGICAL ACTIVATED CARBON (BAC) PROCESS, FOR THE TREATMENT OF SURFACE WATER SOURCES IN THE SHREVEPORT, LOUISIANA AREA WHICH CONTAIN HIGH DISSOLVED ORGANIC CARBON (DOC). A 10 GPM PILOT PLANT WILL BE CONSTRUCTED AND OPERATED AT THE AMISS FILTER PLANT IN SHREVEPORT. VARIOUS UNIT PROCESSES INCLUDING BAC, GAC, FLOCCULATION, PRE- AND POST-DISINFECTION WILL BE UTILIZED IN THE PILOT FACILITY. THE PRINCIPAL ANALYTICAL PARAMETERS TO BE MONITORED INCLUDE DOC, DISSOLVED ORGANIC HALOGEN (DOX), TRIHALOMETHANES (THM'S), TRIHALOMETHANE FORMATION POTENTIAL (THMFP), AND OTHER INDICATORS OF DISSOLVED ORGANIC CONTENT OF THE RAW AND TREATED WATERS. IN ADDITION, THE PROJECT WILL EXAMINE THE FEASIBILITY FOR SUBSTITUTION OF ACTIVATED CARBON AND/OR BIOLOGICAL ACTIVATED CARBON IN THE DUAL MEDIA FILTERS CURRENTLY IN USE AT THE AMISS FILTER PLANT FOR THE PURPOSE OF IMPROVING ORGANICS REMOVAL.

U.S. ENVIRONMENTAL PROTECTION AGENCY

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OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

PROJECT NO. (Do not use this space)
SSIE
EPA R806160-01

TITLE OF PROJECT

Selenium Removal From Groundwater

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Project Director: Mr. Andy Sutherland, General Manager, Ramona Municipal Water District

Principal Investigator: Dr. R. Rhodes Trussell, Vice President, James M. Montgomery, Consulting Engineers, Inc.

NAME AND ADDRESS OF APPLICANT INSTITUTION

Ramona Municipal Water District
105 W. Earlham Street
P.O. Box 848 Ramona, California 92065

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objectives of this project are to define and optimize the operational parameters of the activated alumina adsorption process for removal of selenium from groundwater. The approach to this project for the study of the removal of selenium from drinking water has been developed so that each progressive phase contributes to and simplifies the following phase. The project has been divided into three phases: I. Analytical Techniques, II. Bench Scale Tests, and III. Pilot Plant Studies. Straightforward techniques for the analysis of Se(IV), Se(VI) and organic selenium in water are an important prerequisite as they will facilitate full concentration on the selenium removal process itself. The Bench Scale work will involve the development of adsorption isotherms which will be used to efficiently design column studies. The column tests will allow prompt resolution of optimum regeneration techniques, relative selectivities, and selenium breakthrough. The Pilot Plant phase of the project will evolve the engineering data required to determine the feasibility of using activated alumina to remove selenium from drinking water.

U.S. ENVIRONMENTAL PROTECTION AGENCY **NOTICE OF RESEARCH PROJECT** *(Please read reverse before completing)*	*Form Approved* *OMB No. 158-R0081* PROJECT NO. (Do not use this space) SSIE R80617301
PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE	EPA

TITLE OF PROJECT

Determination of Minimal Human Infectious Dose of an Enterovirus in Drinking Water

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Gilbert M. Schiff, M.D. - Director, The Christ Hospital Institute of Medical Research Cincinnati, Ohio.

Pasquale V. Scarpino, Ph.D. - Dept. of Civil and Environmental Engineering, University of Cincinnati, Professor of Environmental Engineering

NAME AND ADDRESS OF APPLICANT INSTITUTION

The Christ Hospital Institute of Medical Research
2141 Auburn Avenue
Cincinnati, Ohio 45219

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Objective: To determine the minimal infectious dose of ECHO-12 virus in drinking water in susceptible human volunteers.

Approach: To inoculate volunteers with varying doses of ECHO-12 virus in drinking water and follow the volunteers for evidence of infection (viral shedding and antibody response) and/or illness (signs and symptoms)

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OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)

SSIE

EPA R806214-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Assessment of Energy-Related Toxicant Stress in an Engineered Ecosystem

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. Robert H. Boling, Jr., Asst. Professor, Zoology; Dr. William E. Cooper, Professor, Zoology; Dr. Kenneth W. Cummins, Professor, Kellogg Biological Station; Dr. Erik D. Goodman, Electrical Engineering and Systems Science, Assoc. Professor; Dr. Howard E. Johnson, Professor, Pesticide Research Center.

NAME AND ADDRESS OF APPLICANT INSTITUTION

Michigan State University, East Lansing, Michigan 48824

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

To achieve the basic objective of assessing lotic ecosystem response to energy-related toxic effluents, this program will design, implement, and operate two independent lotic mesocosms, each at least 1035 meters in length and controlled to minimize exogenous systemic perturbations. These channels will be manipulated experimentally to quantitatively evaluate chronic impacts and fates of specific energy-related toxicants. Initial experiments will deal with phenols. Concurrent with the experimental research, quantitative predictive models will be developed and refined to fully characterize the experimental mesocosms.

Due to the channel configurations, some results of this project will be useful for raceway aquaculture.

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*PROJECT: 004778-STUDY OF DENTAL EFFECTS IN A POPULATION EXPOSED TO H2O FLUORIDE LEVELS
               IN "CRITICAL" ZONE
                    STARTING/ COMPLETION DATE : 02/79 - 12/80 :   FY79
                    TASK CODE=D823B-024C   **EPA=R806238-01  ** (GRANT)
  EPA  OFFICER.: JB LUCAS               EPA/HERL - CINC                 513-684-7429
  INVESTIGATOR.: CT SMITH               UNIV OF TEXAS                   SW RES INST
                 VA SEGRETO             UNIV OF TEXAS                   SW RES INST
                 D  JOHNSON             SOUTHWEST RESEARCH INST
  MILESTONES...: 03/79 -SELECTION OF STUDY SITES
                 04/79 -DEVELOP RECRUITMENT PROTOCOL
                 08/79 -PRE-TEST PROTOCOL DEVELOPED
                 08/80 -PERFORM SAMPLING AND COLLECT CHEMICAL DATA
                 10/80 -DATA ANALYSIS
                 12/80 -PREPARE FINAL REPORT
                 12/80 -PROVIDE NEW DOSE RESPONSE INFORMATION ON PRESENT FLUORIDE STANDARD
  PROGRAM ID...: (PE-823 )          HEALTH EFFECTS
  FINAL OUTPUT.: PROVIDE NEW DOSE RESPONSE INFORMATION ON PRESENT
                 FLUORIDE STANDARD.
  MANDATE......: 10-15      SAFE DRINKING WATER ACT
  ORDIS CODES..: RECN-004778         SSIE-GMA  5774       EPA -R806238-01      TASK-D823B-024C
                 ORD -RD10830-1079   MAND-10-15           PE  -823
                                     LABT-OHR

  PROJ STATUS..: PROJECT-ACTIVE      CATEGORY-RESEARCH    DATA-ORIGINAL        UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: IN THE PROPOSED STUDY, INFORMATION REGARDING MOTTLING AND DISCOLORATION OF TEETH WILL BE COMPARED TO FLUORIDE LEVELS IN THE PUBLIC WATER SUPPLIES OF SEVERAL COMMUNITIES. VOLUNTEER PARTICIPANTS WILL BE RECRUITED THROUGH PUBLIC SCHOOLS IN EIGHT COMMUNITIES HAVING NATURALLY OCCURRING HIGH FLUORIDE LEVELS. STUDENTS FROM GRADES 1-4 (6-9 YRS OF AGE) AND WHOSE FAMILIES UTILIZE WATER DELIVERED BY THE COMMUNITY WATER SYSTEM WILL SERVE AS A SOURCE OF VOLUNTEERS. APPROACH: AN ORAL EXAMINATION TO DETERMINE LEVEL OF MOTTLING, DISCOLORATION OF TEETH AND A DMFS SURVEY WILL BE ADMINISTERED TO EACH PARTICIPANT AND A URINE SAMPLE WILL BE COLLECTED FOR FLUORIDE ANALYSIS. INFORMATION REGARDING PERSONAL AND HEALTH BACKGROUND WILL BE OBTAINED WITH SPECIALLY DESIGNED QUESTIONNAIRE FORMS. AN OPINION SURVEY REGARDING PERCEPTION OF PROBLEMS RELATED TO TEETH MOTTLING AND DISCOLORATION WILL ALSO BE ADMINISTERED BY USE OF A SECOND QUESTIONNAIRE FORM. DATA RESULTING FROM ORAL EXAMINATIONS, ANALYSES OF URINE SAMPLES, BACKGROUND HEALTH AND PERSONAL INDICATORS, AND OPINIONS REGARDING THE PROBLEMS OF MOTTLING AND DISCOLORATION WILL BE COMPARED TO FLUORIDE LEVELS IN THE VARIOUS COMMUNITY WATER SUPPLIES TO DETERMINE THE SPECIFIC LEVEL OF FLUORIDE AT WHICH PROBLEMS OCCUR.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA 5 806248-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT Full Scale Demonstration of Waste Sludge Incinerator Fuel Reduction

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Program Director - David W. Hoppock-Director, Department of Public Works, City of Indianapolis

Program Manager - Eugene W. Waltz, Urban Systems Engineering and Research Div., Indianapolis Center for Advanced Research

NAME AND ADDRESS OF APPLICANT INSTITUTION

City of Indianapolis, Department of Public Works
2460 City-County Building
Indianapolis, Indiana 46204

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of this project is to demonstrate a 40 percent reduction in fuel consumption in the full scale operation of the Indianapolis waste sludge incinerator plant. A newly developed operational control system, which has been tested on one incinerator, will be installed and operated on all (8) plant incinerators to achieve the fuel reduction. The program work plan will include (1) the design, specification, purchase and installation of control instrumentation, (2) incinerator equipment modifications, (3) operator training, (4) a 5-6 month operational demonstration of reduced fuel consumption, and (5) documentation and evaluation of the results. The program will be executed over a 12-15 month time period.

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NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R806251-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT
Dissolution of $CaCO_3$ in Aqueous Solution

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Gary T. Rochelle, Assistant Professor, Department of Chemical Engineering

NAME AND ADDRESS OF APPLICANT INSTITUTION

Bureau of Engineering Research, University of Texas at Austin,
Austin, Texas 78712

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SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Data and understanding on the rates of $CaCO_3$ dissolution in aqueous, solution are essential to the reliable design and operation of scrubbing systems using limestone for stack gas desulfurization. Previous quantitative investigations of $CaCO_3$ dissolution have concentrated on solutions typical of the ocean environment or acid mine drainage. These investigators concluded that either H^+ diffusion or surface reaction can be the limiting mechanism of calcite ($CaCO_3$) dissolution, depending on the pH. This investigation will be directed toward conditions typical of stack gas scrubbing--55°C, P_{CO_2}=0.1-1 atm, pH 4-6, dissolved Ca^{++}, Mg^{++}, Na^+, $SO_4^=$, HSO_3^-. and Cl^-. Previous investigations under these conditions have not included adequate control of pH and CO_2 partial pressure and adequate characterization of $CaCO_3$ particle size and surface area. In this investigation $CaCO_3$ will be dissolved by acid titration at constant pH and controlled P_{CO_2}. Surface area will be determined by BET adsorption and particle size analysis. Rates of $CaCO_3$ dissolution will be measured with normal constituents of scrubbing slurry and solution and with buffer additives such as organic acids.

*PROJECT: 004769-ORGANIC AND ORGANOTIN COMPOUNDS LEACHED FROM PVC AND CPVC WATER PIPES

STARTING/ COMPLETION DATE : 10/78 - 10/80 : FY79
TASK CODE=D823B-012C **EPA=R806275-01 ** (GRANT)

EPA OFFICER.: NS ULMER   EPA/HERL - CINC   513-684-7459
INVESTIGATOR.: EA BOETTNER   UNIV OF MICHIGAN   SCH OF PUB HLTH
MILESTONES...: 10/79 -COMPLETION OF PHASE I: DEVELOPMENT OF METHODOLOGY
10/80 -DEV. AND APPLICAT. OF METHODS FOR ORGANICS AND ORGANOTINS
PROGRAM ID...: (PE-823)   HEALTH EFFECTS
FINAL OUTPUT.: METHODS FOR ORGANICS AND ORGANOTIN
MANDATE......: 10-15   SAFE DRINKING WATER ACT
CURR. RESULTS: LITERATURE SEARCH FOR METHODOLOGY, PREPARATION OF EXTRACTS OF PLASTIC SAMPLES, AND CHARACTERIZATION OF FIVE TIN COMPOUNDS USED AS STABILIZERS.
ORDIS CODES..: RECN-004769   SSIE-GMA 5781   EPA -R806275-01   TASK-D823B-012C
ORD -RD10B30-1079   MAND-10-15   PE -823
LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE   CATEGORY-RESEARCH   DATA-ORIGINAL   UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: TO DETERMINE WHETHER ORGANOTIN COMPOUNDS ARE INTRODUCED INTO POTABLE WATER SUPPLIES WHEN USING POLYVINYL CHLORIDE AND CHLORINATED POLYVINYL CHLORIDE PIPE CONTAINING TIN COMPOUNDS AS STABILIZERS. A SECONDARY OBJECTIVE IS TO DETERMINE WHAT CHEMICALS OTHER THAN TIN COMPOUNDS ARE LEACHED FROM SUCH PIPING INTO THE WATER SUPPLY. APPROACH: A TWO-STEP APPROACH IS BEING USED. FIRST, THE ANALYTICAL METHODOLOGY, CAPABLE OF DETERMINING THE EXTRACTED CHEMICALS IN THEIR COMPOUND FORM AT THE LEVELS AT WHICH THEY ARE EXPECTED TO BE PRESENT, WILL BE ESTABLISHED. THIS METHODOLOGY WILL THEN BE INCORPORATED IN A SYSTEM TO DETERMINE THE AMOUNTS OF ORGANOTINS AND OTHER COMPOUNDS IN WATER SUPPLIES USING PVC AND CPVC PIPING. RESULTS TO DATE: ACCOMPLISHMENTS DURING THE FIRST THREE MONTHS OF THIS EFFORT INCLUDE A LITERATURE SEARCH FOR APPROPRIATE METHODOLOGY, COMMUNICATION WITH PVC AND CPVC AND STABILIZER FORMULATORS, PREPARATION OF APPROPRIATE EXTRACTS OF PLASTIC SAMPLES, AND CHARACTERIZATION OF FIVE TIN COMPOUNDS USED AS STABILIZERS.

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*PROJECT: 004657-LEACHING CHARACTERISTICS OF RAW SURFACE STORED OIL SHALE

                 STARTING/ COMPLETION DATE : 10/78 - 03/80 :   FY79
                 TASK CODE=B623B-845   **EPA=R806278-01  ** (GRANT)
                                        EPA/IERL - CINC                  513-684-4417
  EPA  OFFICER.: ER BATES               COLORADO STATE UNIV              AGRIC ENG DEPT
  INVESTIGATOR.: DB MCWHORTER           COLORADO STATE UNIV              AGRIC ENG DEPT
                 SK SKOGERBOE
  MILESTONES...: 03/80 -FINAL REPORT:  LEACHING CHARACTERISTICS OF SURFACE STORED OIL SHALE
  PROGRAM ID...: (PE-623 )            EXTRACTION AND PROCESSING TECHNOLOGY
  MANDATE......: 10-99    (NON-NUCLEAR ENERGY) PL 93-577
  CURR. RESULTS: WORK STARTED, BUT NO RESULTS YET.
  ORDIS CODES..: RECN-004657        SSIE-GMA  5919     EPA -R806278-01     TASK-B623B-845
                 ORD -RB10B30-1079  MAND-10-99         PE  -623
                                    LABT-EET

  PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH  DATA-UPDATED        UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS PROJECT IS TO DETERMINE THE LEACHING CHARACTERISTICS OF RAW OIL SHALE FOR THE PURPOSE OF DETERMINING POTENTIAL IMPACTS UPON WATER QUALITY OF LARGE QUANTITIES OF SURFACE-STORED RAW OIL SHALE. SUBORDINATE OBJECTIVES ARE TO ESTIMATE THE QUANTITIES OF LEACHATE WATER LIKELY TO BE AVAILABLE IN FIELD LOCATIONS AND TO COMBINE THESE DATA WITH DATA ON LEACHATE CONCENTRATIONS TO ESTIMATE POTENTIAL LOADING OF RECEIVING WATERS WITH DISSOLVED SOLIDS, TRACE ELEMENTS, AND ORGANICS. APPROACH: DATA WILL BE OBTAINED BY SUBJECTING COLUMNS OF MINED RAW SHALE TO LEACHING TESTS UNDER A VARIETY OF FLOW RATES, CONDITIONS OF AERATION, AND COLUMN LENGTHS. CHEMICAL ANALYSES OF RAW SHALE AND EFFLUENT FOR COMMON IONS, TRACE ELEMENTS, AND ORGANICS WILL BE MADE. RESULTS TO DATE: WORK HAS STARTED BUT NO RESULTS ARE AVAILABLE AS YET.

*PROJECT: 004758-MOSQUITO BIOASSAYS FOR DRINKING WATER TOXICANTS

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                 STARTING/ COMPLETION DATE : 03/79 - 09/81 :   FY79
                 TASK CODE=D629 -006    **EPA=R806284-01 ** (GRANT)
EPA  OFFICER.: KL BLACKBURN           EPA/HERL - CINC                  513-684-7408
INVESTIGATOR.: CA LANG                UNIV OF LOUISVILLE FOUND         CHEM & ENV ENG DEPT
               BJ MILLS               UNIV OF LOUISVILLE FOUND         CHEM & ENV ENG DEPT
MILESTONES...: 09/80 -COMPLETION OF TEST PROCEDURE STANDARDIZATION
               09/81 -VALIDATION OF TEST SYSTEMS
PROGRAM ID...: (PE-629 )          HEALTH EFFECTS
FINAL OUTPUT.: VALIDATION OF TEST SYSTEMS
MANDATE......: 10-15     SAFE DRINKING WATER ACT
ORDIS CODES..: RECN-004758        SSIE-GMA  5778       EPA -R806284-01      TASK-D629 -006
               ORD -RD10B30-1079  MAND-10-15           PE  -629
                                  LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE     CATEGORY-RESEARCH    DATA-ORIGINAL        UPDATED-  JUL-SEP 79
                                  ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE PRINCIPAL OBJECTIVES OF THIS PROPOSAL ARE TO DEVELOP MOSQUITO BIOASSAYS FOR DRINKING WATER BASED ON LARVAL GROWTH AND ALSO ADULT LONGEVITY. OUR OVERALL OBJECTIVE IS TO DEVELOP VALID, RAPID BIOASSAYS TO DETERMINE THE TOXICITY OF SUSPECTED COMPOUNDS FOUND IN DRINKING WATER. APPROACH: THESE ASSAYS WILL BE APPLIED TO DETERMINE THE ACUTE AND CHRONIC TOXICITY OF TRIHALOMETHANES AND RELATED ORGANIC CONTAMINANTS. IN ADDITION, THE PHARMACOKINETICS OF SELECTED TOXIC ORGANIC CONTAMINANTS WILL BE STUDIED IN THE MOSQUITO IN ORDER TO COMPARE ITS METABOLISM WITH THAT OF MAMMALS. FINALLY, THE RELATIONSHIP OF GLUTATHIONE AND ITS ENZYME SYSTEMS WILL BE DETERMINED AND CORRELATED WITH THE PREVIOUSLY OBTAINED TOXICITY AND METABOLISM INFORMATION.

Form Approved
OMB No. 158-R0081

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

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PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

PROJECT NO. (Do not use this space)

SSIE

EPA R 806286-01

TITLE OF PROJECT

Effect of Cadmium and Sewage Wastewaters on Cypress Strands

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Howard T. Odum, Graduate Research Professor, Environmental Engineering Sciences and Director, Center for Wetlands
Patrick Brezonik, Professor, Environmental Engineering Sciences
Katherine C. Ewel, Assistant Professor, School of Forest Resources & Conservation

NAME AND ADDRESS OF APPLICANT INSTITUTION

Center for Wetlands, University of Florida, Phelps Lab, Gainesville, Florida 32611

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

This is a proposal to measure the response of cypress swamps to cadmium and to sewage flowing under controlled arrangements in the field. Based on our preliminary study of sewage disposal in cypress domes and in a cypress strand receiving sewage for 45 years at Waldo, Florida (Odum, Ewel, Brezonik et al., 1978; Nessel, 1978), the feasibility of cypress wetlands as tertiary treatment systems has been indicated. wever, important questions remain. One of these is: What is the loading that is appropriate for cypress strands (a flowing swamp)? In a preliminary study of the strand at Waldo, adequate control of water was not available to determine the loading (inches per week of wastewater).

A second question is: What is the effect of heavy metals such as cadmium on the wetland ecosystem; what is the extent of metal removal; and what is the fate of heavy metals in the swamp?

Parallel barriers will be constructed in the cypress strand, forming two flowing swamp strips to which wastewaters will be supplied at a controlled rate. Wastewater will be spiked with cadmium to levels found in municipal wastewaters from larger cities. Measurements down the flowing strands will indicate when the levels of nutrients, cadmium, and sewage microbes are at background levels. Measurements of tree growth, litter, vegetation indices, and animal diversity will be used as indices of effects.

*PROJECT: 004852-AN AQUATIC ECOSYSTEM MODELING PACKAGE FOR MINICOMPUTERS

STARTING/ COMPLETION DATE : 12/78 - 12/80 : FY79
TASK CODE=K609A-414-A **EPA=R806299-01 ** (GRANT)

EPA OFFICER.:	TO BARNWELL	EPA/ERL - ATHENS	404-546-3175
INVESTIGATOR.:	RA PARK	RENSSELAER POLY INST	GEOLOGY DEPT
	HR BUNGAY	RENSSELAER POLY INST	GEOLOGY DEPT
	JE LEONARD	RENSSELAER POLY INST	GEOLOGY DEPT

MILESTONES...: 08/79 -INTERIM REPORT
12/80 -FINAL REPORT

PROGRAM ID...: (PE-609) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE OF POLLUTANTS

MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT

ORDIS CODES..:	RECN-004852	SSIE-GMA 5821	EPA -R806299-01	TASK-K609A-414-A
	ORD -RK10B30-1079	MAND-10-01	PE -609	
		LABT-EPE		

PROJ STATUS..:	PROJECT-ACTIVE	CATEGORY-RESEARCH	DATA-ORIGINAL	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVES: AN EFFICIENT, FAIL-SAFE PACKAGE OF ENVIRONMENTAL-SPECIFIC VERSIONS OF THE AQUATIC ECOSYSTEM MODEL CLEANER WILL BE DEVELOPED TO AID IN THE ENVIRONMENTAL MANAGEMENT OF FRESHWATER LAKES AND RESERVOIRS. THE PACKAGE WILL INCLUDE A SERIES OF STREAMLINED, SPECIAL-PURPOSE MODELS (MICRO-CLEANER) PROGRAMMED TO RUN ON A MINICOMPUTER. IT WILL ALSO HAVE AN INTERACTIVE INPUT-OUTPUT PROGRAM TO SERVE AS A "SMART" INTERFACE WITH OTHER MORE POWERFUL VERSIONS, SUCH AS MS.CLEANER, PERMITTING CONVERSATIONAL-MODE COMPUTER GRAPHICS. APPROACH: THE AQUATIC ECOSYSTEM MODEL CLEANER IS THE FOUNDATION UPON WHICH THIS MODEL WILL BE BASED. THE PRINCIPAL THRUST OF THIS PROJECT WILL BE TO RETAIN THE REALISM AND GENERALITY OF THE MODEL, WHILE AT THE SAME TIME SIMPLIFYING THE STRUCTURE AND PROGRAMMING FOR IMPLEMENTATION ON A MINICOMPUTER. SENSITIVITY ANALYSIS OF CLEANER WILL BE USED TO IDENTIFY THOSE ASPECTS OF THE MODEL THAT ARE INSENSITIVE IN A PARTICUULAR AQUATIC ENVIRONMENT. CLEANER WILL BE PROGRAMMED FOR A MINICOMPUTER, GIVING SPECIAL ATTENTION TO NUMERICAL ACCURACY AND EXECUTION TIME. ENVIRONMENT-SPECIFIC VERSIONS WILL BE DEVELOPED FOR SEVERAL DISTINCT TYPES OF LAKES AND RESERVOIRS. A LIMITED NUMBER OF APPLICATION-SPECIFIC VERSIONS WILL DEMONSTRATE THE UTILITY OF THE MODEL. A USER'S MANUAL AND VIDEO TAPE PRESENTATION EXPLAINING THE USE OF THE MODEL WILL BE PROVIDED.

U.S. ENVIRONMENTAL PROTECTION AGENCY

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OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R806301-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Studies of Drinking Water Quality and Cancer

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Peter Isacson, M.D. - Principal Investigator, Preventive Med/Environmental Hlth
William Hausler, Ph.D. - Director, State Hygienic Laboratory
Roger Splinter, Ph.D. - State Hygienic Laboratory
Judy Kondo, Ph.D. - Preventive Med/Environmental Hlth
Richard Talcott, M.S. - Iowa Geologic Survey

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Iowa
Iowa City, IA 52242

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The basic objectives are to (1) correlate drinking water quality characteristics with cancer incidence and mortality in the states of Iowa and Colorado; and (2) to develop an ongoing method of surveillance of Iowa surface and alluvial water supplies for organic contaminants. Three phases are planned, an initial phase in which cancer cases are located precisely within a municipality, migration is estimated, coding is completed, and pilot studies are performed; a phase of new analyses of water samples for n-nitroso compounds and use of GC/MS for ongoing monitoring of organics; and a phase of detailed statistical analysis using both aggregate and case-control methods.

U.S. ENVIRONMENTAL PROTECTION AGENCY

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OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R806302-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

"Improved Techniques for Residual Ozone"

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. Gilbert Gordon, Professor and Chairman, Department of Chemistry, Miami University
(Principal Investigator)
Dr. Hiroshi Tomiyasu, Department of Chemistry, Shinshu University, Matsumoto, Japan
(Post Doctorate Research Associate)

NAME AND ADDRESS OF APPLICANT INSTITUTION

Miami University
Oxford, Ohio 45056

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The overall objectives of this project are to provide reliable and precise methods of analysis for residual ozone. Hopefully, these methods will be reliable to approximately 1%, completely free from interferences and readily carried out by relatively untrained personnel such as laboratory technicians or members of the water treatment plant staff.

A secondary goal is to identify relatively inexpensive but reliable instrumental techniques applicable to continuous analysis of residual ozone in waste water supplies covering concentration ranges from as low as 0.05 mg/liter to as high as 10 mg/liter with a proposed accuracy and internal precision of approximately ±5%.

The project will also include a detailed comparison of existing methods for residual ozone including reliability of the method, accuracy of the method, internal precision and potential interferences, thus allowing a direct comparison between residual ozone analyses made in different laboratories and between different samples.

New methods developed under the auspices of this research will be designed to meet the above objectives with reliability of the method, selectivity (i.e., absence of interferences), internal precision and overall reliability as major objectives.

*PROJECT: 004433-ANIMAL HEALTH EFFECTS OF INHALED PARTICULATES

STARTING/ COMPLETION DATE : 09/78 - 09/81 : FY78
TASK CODE=H601D-8389 **EPA=R806327-01 ** (GRANT)

EPA OFFICER.: DE GARDNER EPA/HERL - RTP
INVESTIGATOR.: R EHRLICH I I T RES INST
MILESTONES...: 02/79 -COMPLETE ACUTE STUDIES OF 2 FINE PARTICLES
04/79 -COMPLETE ACUTE STUDIES OF 2 COARSE PARTICLES
06/79 -COMPLETE INTERMITTENT STUDIES OF 2 FINE PARTICLES
10/79 -COMPLETE INTERMITTENT STUDIES OF 2 COARSE PARTICLES
10/80 -COMPLETE ACUTE AND INTERMITTENT STUDIES OF 4 ADDITIONAL COMPOUNDS
11/80 -BEGIN CHRONIC STUDIES
PROGRAM ID...: (PE-601) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
MANDATE......: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-004433 SSIE-GMA 5556 EPA -R806327-01 TASK-H601D-8389
ORD -RH10B30-1078 MAND-10-02 PE -601
LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: TO PROVIDE AN IMPROVED DATA BASE FOR THE HEALTH EFFECTS OF PARTICULATES, MICE WILL BE EXPOSED TO PARTICLES CONTAINED IN THE FINE (LESS THAN 2.5 MICRONS) AND COARSE (APPROXIMATELY 8 MICRONS) MODES OF AMBIENT AIR. THE ACTUAL POLLUTANTS CHOSEN WILL DEPEND UPON MONITORING DATA AND ADVICE FROM ATMOSPHERIC CHEMISTS. EXPOSURES WILL BE ACUTE, INTERMITTENT AND CHRONIC AND WILL INCLUDE EXAMINATION OF DOSE RESPONSE RELATIONSHIPS. THE PRIMARY EMPHASIS OF THIS PROJECT IS ON HOST DEFENSE MECHANISMS AGAINST INFECTIOUS PULMONARY DISEASE. TO THIS END, THE INFECTIVITY MODEL WILL BE USED IN WHICH POLLUTANT EXPOSED ANIMALS RECEIVE AEROSOLS OF INFECTIOUS BACTERIA, AND THE ENSUING MORTALITY IS COMPARED TO THAT FOR CLEAN-AIR EXPOSED CONTROLS. ADDITIONAL PARAMETERS SUCH AS PULMONARY BACTERICIDAL ACTIVITY, ALVEOLAR MACROPHAGE FUNCTION AND PULMONARY MORPHOLOGY (USING SCANNING ELECTRON MICROSCOPIC TECHNIQUES) WILL ALSO BE EXAMINED.

*PROJECT: 004672-TEST FIRING OF SOLID WASTE AS A SUPPLEMENTAL FUEL TO AN INDUSTRIAL BOILER

STARTING/ COMPLETION DATE : 09/78 - 09/80 : FY79
TASK CODE=B624B-544 **EPA=R806328-01 ** (GRANT)

EPA OFFICER.: RA OLEXSEY — EPA/IERL - CINC
INVESTIGATOR.: G BOLEY — MADISON CITY GOVT
ML SMITH — MADISON CITY GOVT
MILESTONES...: 09/80 -FINAL REPORT RECEIVED
PROGRAM ID...: (PE-624) CONSERVATION AND UTILIZATION TECHNOLOGY ASSESSMENT
MANDATE......: 10-99 (NON-NUCLEAR ENERGY) PL 93-577, (RCRA) PL 94-580
10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE

ORDIS CODES..:

RECN-004672	SSIE-GMA 5916	EPA -R806328-01	TASK-B624B-544
ORD -RB10B30-5079	MAND-10-99	MAND-10-05	
MAND-20-14	PE -624		LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: IT IS THE PURPOSE OF THIS PROJECT TO INVESTIGATE THE FEASIBILITY OF CO-FIRING MUNICIPAL SOLID WASTE WITH FOSSIL FUEL IN AN INDUSTRIAL BOILER. THE ENVIRONMENTAL IMPACT OF THE CO-FIRING OPERATION WILL BE EVALUATED. ECONOMIC EFFECTS OF CO-FIRING WILL BE ANALYZED FOR BOTH THE MUNICIPALITY SUPPLYING THE FUEL AND THE INDUSTRIAL PLANT USING THE FUEL. APPROACH: THIS INVESTIGATION SHALL BE IN THE FORM OF AN ACTUAL LIMITED DURATION TEST-FIRING AT AN EXISTING INDUSTRIAL BOILER. TESTING DURATION WILL BE FOR 1000 HOURS TOTAL.

*PROJECT: 004738-BACTERIAL SURVIVAL IN POTABLE WATER WITH LOW TURBIDITY

STARTING/ COMPLETION DATE : 09/78 - 10/80 : FY79
TASK CODE=C824A-S2T035 **EPA=R806329-01 ** (GRANT)

EPA OFFICER.: RH TAYLOR — EPA/MERL - CINC — 513-684-7204
INVESTIGATOR.: RH CIULLO — NASSON COLLEGE — DEPT OF BIOL
HE FERRAN — NASSON COLLEGE — DEPT OF BIOL
MILESTONES...: 09/79 -CONTINUATION FUNDED
09/79 -INTERIM REPORT
PROGRAM ID...: (PE-824) DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 10-15 SAFE DRINKING WATER ACT
CURR. RESULTS: SIX WEEKS OF MONITORING DATA.

ORDIS CODES..:

RECN-004738	SSIE-GMA 5991	EPA -R806329-01	TASK-C824A-S2T035
ORD -RC10B30-1079	MAND-10-15	PE -824	
	LABT-EET		

PROJ STATUS..: ACTIVE -MULTIYEAR — CATEGORY-RESEARCH — DATA-UPDATED — UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THIS PROJECT WILL EXAMINE DIFFERENT TYPES AND LEVELS OF TURBIDITY THAT COULD PROVIDE PROTECTION FOR BACTERIAL SURVIVAL DURING DISINFECTION. HOW DO TURBIDITY LEVELS AFFECT THE DISINFECTION OF POTABLE WATER? THE NATURE AND EFFECTS OF BOTH ORGANIC AND INORGANIC TURBIDITIES WILL BE DETERMINED. APPROACH: WEEKLY MONITORING OF THE NORTH BERWICK WATER CO. TREATMENT FACILITY AND DISTRIBUTION SYSTEM WILL INCLUDE STANDARD PLATE COUNT, COLIFORMS, PH, TURBIDITY, CHLORINE, TOC, AND COLOR. LAB SCALE TESTING OF TURBIDITY AFFECTS ON VARIOUS DISINFECTANTS AND DOSAGES WILL BE PERFORMED. RESULTS TO DATE: SIX WEEKS OF MONITORING DATA.

U.S. ENVIRONMENTAL PROTECTION AGENCY

REVISED

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA
R806335-01 REVISED

TITLE OF PROJECT ASSESSMENT OF SOIL, CLAY, AND CAUSTIC-SODA EFFECTS ON LAND DISPOSAL OF CHLORINATED-HYDROCARBON WASTES

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

R. A. Griffin, Geochem. Sect., Geochemist & Head
S. F. J. Chou, Geochem. Sect., Research Associate
D. R. Dickerson, Geochem. Sect., Organic Chemist
N. F. Shimp, Chemical Group, Principal Chemist
Keros Cartwright, Hydrogeol. & Geophysics Section, Geologist & Head

NAME AND ADDRESS OF APPLICANT INSTITUTION
Illinois State Geological Survey (217/344-1481)
University of Illinois
Urbana, Illinois 61801

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

REVISED

Objectives: Determine the attenuation mechanisms and capacity of selected clay minerals and soils for hexachlorocyclopentadiene (HCCPD) and "hex" waste; determine the effects of caustic-soda brine on the attenuation and solubility of HCCPD; develop a chemical model to predict HCCPD migration through soils.

APPROACH: This will be accomplished by characterization of the organic and inorganic pollutants in "hex" waste, determination of the "salting coefficient" for HCCPD in caustic-soda brine, and measurement of adsorption isotherms for HCCPD on various soils and clay minerals.

Mechanisms of adsorption and predictive models will be developed by measuring the effects of surface area, organic carbon content, concentration, and caustic-soda brines of various concentrations on the adsorption of HCCPD by selected soils and clay minerals. Mobility of HCCPD in soils will be independently assessed by use of soil thin-layer chromatography and column leaching techniques.

The proposed research will be designed to answer the above objectives and to provide an understanding of the fundamental processes that will allow predictions of attenuation in soils not previously tested.

STATUS: Project is just being started.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

EPA 880 6337-01

TITLE OF PROJECT

Pharmacological Effects of Nitrate Exposures

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT

Daniel B. Menzel, Dept. of Pharmacology, Professor of Pharmacology, Principal Investigator; Ernest Elsevier, Dept. of Mechanical Engineering, Associate Professor of Mechanical Engineering, Mechanical Engineer; Kotaro Saito, Dept. of Pharmacology, Research Associate, Tissue Culturist; Fredrick O. O'Neal, Dept. of Pharmacology, Research Associate, Toxicologist

NAME AND ADDRESS OF APPLICANT INSTITUTION

Duke University Medical Center
Durham, North Carolina 27710

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The inhalation toxicity of nitric acid and nitrate salts will be evaluated in rats and guinea pigs. The deposition and clearance of aerosols of nitric acid and nitrate salts will be determined. Toxicity will be assessed by mortality, biochemical and pharmacological end points. The relative toxicity of nitrate salts will be screened by in vitro exposure of human, rat and cat lung cells grown in culture. The growth and incorporation of precursors into nucleic acid and proteins, the biosynthesis of prostaglandins and mode of growth of the cultured cells, and the effects of nitrates on the release of vasoactive hormones from mast cells will be determined. The toxicity of nitrate aerosols to whole animals will be assessed by the measurement of biochemical and pharmacological function ex vivo using the isolated, ventilated and perfused lung. The uptake and metabolism of prostaglandins and 5-hydroxytryptamine will be determined. The release of histamine and slow reacting substance of anaphylaxis will also be measured. The O-demethylation reaction will be determined in situ using the perfused lung. These data will be integrated to assess the hazard to man of the inhalation of atmospheric nitrate particulates.

*PROJECT: 000517-CO-FIRING OF RDF - DROSS WITH COAL IN A STOKER BOILER

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                 STARTING/ COMPLETION DATE : 10/78 - 09/79 :   FY79
                 TASK CODE=B624B-844    **EPA=R806338     ** (GRANT)
EPA  OFFICER.: RA OLEXSEY                EPA/IERL - CINC
INVESTIGATOR.: FR REHM                   MILWAUKEE CO ENV SERV DIV
               R  HECKLINGER             MILWAUKEE CO ENV SERV DIV
               CR VELFY                  MILWAUKEE CO ENV SERV DIV
MILESTONES...: 08/79 -FINAL REPORT RECEIVED
PROGRAM ID...: (PE-624 )          CONSERVATION AND UTILIZATION TECHNOLOGY ASSESSMENT
MANDATE......: 10-05     RESOURCE CONSERVATION AND RECOVERY ACT
               20-14     DAA FOR SOLID WASTE
ORDIS CODES..: RECN-000517         SSIE-GMA  5219 1      EPA -R806338        TASK-B624B-844
               ORD -RB10830-5079   MAND-10-05            MAND-20-14
               PE  -624                                  LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH     DATA-UPDATED        UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THIS RESEARCH AND DEVELOPMENT PROJECT IS TO DETERMINE THE SUITABILITY OF A TRAVELING GRATE STOKER FURNACE FOR COMBUSTION OF COAL AND DROSS FROM A RESOURCE RECOVERY PLANT. IN THE PROJECT, THE DROSS MATERIAL WILL BE FIRED WITH COAL AND THE EMISSIONS FROM THE COMBUSTION PROCESS CHARACTERIZED. APPROACH: THE 900 ACRE MILWAUKEE COUNTY INSTITUTIONS COMPLEX INCLUDES A POWER PLANT TO PRODUCE HEATING STEAM AND ELECTRICITY. STEAM IS GENERATED IN THREE TRAVELING-GRATE, SPREADER-STOKER FIRED BOILERS. ONE SPREADER-STOKER WILL BE FITTED WITH A FUEL FIRING SYSTEM SO THAT DROSS CAN BE SPREAD OVER A BURNING COAL BED. THE PROGRAM WOULD MONITOR AND EVALUATE THE PROBLEMS ASSOCIATED WITH THE FEED SYSTEM.

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*PROJECT: 004737-PILOT PLANT TESTING - REMOVAL OF ORGANIC CONTAMINANTS FROM GLEN COVE,
          N.Y., WATER SUPPLY
               STARTING/ COMPLETION DATE : 11/78 - 01/80 :   FY79
               TASK CODE=C824A-S1T80  **EPA=R806355     ** (GRANT)
 EPA  OFFICER.: WA FEIGE                EPA/MERL - CINC                 513-684-7496
 INVESTIGATOR.: DD RUGGIERO                                             GLEN COVE CITY GOVERNMENT
                A  CARUSO                                               GLEN COVE CITY GOVERNMENT
 MILESTONES...: 04/79 -COMPLETE PILOT PLANT - BEGIN AERATION/ADSORPTION STUDIES
                11/79 -DRAFT OF FINAL REPORT
 PROGRAM ID...: (PE-824 )          DRINK WATER TREATMENT & GROUND WATER PROT
 MANDATE......: 10-15     SAFE DRINKING WATER ACT
                20-13     DAA FOR DRINKING WATER
                20-RO2    EPA REGION II
                30-99     WATER TREATMENT
 CURR. RESULTS: PILOT SCALE UNITS COMPLETED AND ANALYTICAL
                CAPABILITIES AVAILABLE.  PROJECT UNDERWAY.
 ORDIS CODES..: RECN-004737         SSIE-GMA  5888       EPA -R806355        TASK-C824A-S1T80
                ORD -RC10B30-5079   MAND-10-15           MAND-20-13
                MAND-20-RO2         MAND-30-99           PE  -824
                LABT-EET
 PROJ STATUS..: PROJECT-ACTIVE      CATEGORY-RESEARCH    DATA-ORIGINAL       UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: THE PRIME RESEARCH OBJECTIVES ARE TO (1) ESTABLISH PRACTICALITY, (2) DETERMINE RELEVANT DESIGN PARAMETERS AND (3) CAPITAL AND OPERATING COSTS OF BOTH AERATION AND ABOSORPTION TECHNIQUES FOR REMOVING TRICHLORO- AND TETRACHLORO-ETHYLENE FROM THE CITY OF GLEN COVE DRINKING WATER SUPPLY. APPROACH: THE APPROACH IS TO TEST SUITABLY SIZED PILOT PLANT EQUIPMENT TO PERMIT RELIABLE SCALE-UP. FOR EACH PROCESS, THE EFFECTS OF VARYING OPERATING PARAMETERS WILL BE INVESTIGATED, SUCH AS - FOR ADSORPTION - RESIN CONTACT TIME, BED DEPTH, AND REACTIVATION TECHNIQUES AND - FOR AERATION - AIR TO WATER RATIO, RESIDENCE TIME, TEMPERATURE. TESTS WILL BE CONDUCTED OVER EXTENDED PERIODS TO ASSURE RELIABILITY FOR MOST PROMISING PROCESS PARAMETERS. RESULTS TO DATE: PILOT SCALE UNITS HAVE BEEN COMPLETED AND ANALYTICAL CAPABILITIES ARE AVAILABLE. PROJECT IS UNDERWAY.

*PROJECT: 004727-TREATMENT OF STORMWATER RUNOFF BY A MARSH/FLOOD BASIN

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                 STARTING/ COMPLETION DATE : 09/78 - 03/81 :    FY79
                 TASK CODE=C822A-S2T026 **EPA=R806357      ** (GRANT)
EPA  OFFICER.: AN TAFURI                EPA/MERL - CINC                 201-321-6679
INVESTIGATOR.: YJ LITWIN                                                RAMLIT ASSOCIATES INC.
               YJ LITWIN                                                ASSN. OF BAY AREA GOVERNMENTS
MILESTONES...: 08/79 -COMPLETE INITIAL CHARACTERIZATION OF STUDY AREA
               02/80 -COMPLETE LITERATURE REVIEW
               03/80 -COMPLETE INFLOW AND OUTFLOW DATA COLLECTION
               06/80 -COMPLETE ANALYSIS OF RESULTS
               09/80 -COMPLETE DRAFT FINAL REPORT
PROGRAM ID...: (PE-822 )          POINT SOURCE TECH DEV (WASTEWATER SYS)
MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
               30-99     URBAN RUNOFF TREATMENT
ORDIS CODES..: RECN-004727        SSIE-GMA  5994       EPA -R806357         TASK-C822A-S2T026
               ORD -RC10B30-5079  MAND-10-01           MAND-30-99
               PE  -822                                LABT-EET

PROJ STATUS..: ACTIVE -MULTIYEAR  CATEGORY-RESEARCH    DATA-UPDATED         UPDATED-  JUL-SEP 79
                                  ACCESS-PUBLIC
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ABSTRACT......: OBJECTIVE: TO ANALYZE THE QUALITATIVE CHANGES OF SURFACE RUNOFF AS A RESULT OF PONDING IN A MARSH/FLOOD BASIN. COMPARISON WILL BE MADE BETWEEN USING THE MARSH/FLOOD BASIN AS A TREATMENT MEASURE FOR MITIGATING STORMWATER RUNOFF POLLUTION, OTHER BMPS AND STRUCTURAL TECHNIQUES USED FOR THAT PURPOSE. APPROACH: THE OBJECTIVES WILL BE SATISFIED BY AN EXTENSIVE SAMPLING AND MONITORING PROGRAM WHICH WILL INCLUDE COLLECTING DATA AND ANALYZING CHARACTERISTICS OF THE BASIN AND THE TRIBUTARY WATERSHED AND COST INFORMATION OF BASIN OPERATION. ALSO INCLUDED VIA SUPPLEMENTAL FUNDING AS DESCRIBED HEREIN WILL BE A THOROUGH LITERATURE SEARCH UPDATING THE STATE-OF-THE-ART ON POLLUTANT CONTROL UTILIZING BEST VEGETATIVE AND HYDRAULIC PRACTICES.

*PROJECT: 004026-TEXAS LIGNITE DEVELOPMENT ENVIRONMENTAL ASSESSMENT AND RESEARCH PLAN

STARTING/ COMPLETION DATE : 04/78 - 03/79 : FY78
TASK CODE=V624C-14 **EPA=R806359-01 ** (GRANT)

EPA OFFICER..: P SCHWENGELS EPA/OEET- DAA
INVESTIGATOR.: D WHITE STA ENERGY ADV COUN
MILESTONES...: 05/78 -PHASE I WORK PLAN
06/78 -PHASE I REPORT
06/78 -REVIEW PANEL MEETING
08/78 -PHASE II & III WORK PLAN
12/78 -PHASE II REPORT
01/79 -REVIEW PANEL MEETING
02/79 -PHASE III REPORT
03/79 -FINAL REPORT
PROGRAM ID...: (PE-624) CONSERVATION AND UTILIZATION TECHNOLOGY ASSESSMENT
FINAL OUTPUT.: FINAL REPORT PRESENTING RESULTS OF RESEARCH FORMAT.
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: PRELIM. PHASE I REPORT, REVIEW PANEL MEETING, COMPLETION OF WORK PLAN.

ORDIS CODES..: RECN-004026	SSIE-GMA 5206	EPA -R806359-01	TASK-V624C-14
ORD -RV10B30-1078	MAND-10-02	PE -624	
	LABT-EET		

PROJ STATUS..: PROJECT-ACTIVE	CATEGORY-RESEARCH	DATA-ORIGINAL	UPDATED- OCT-DEC 77
	ACCESS-PUBLIC		

ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO ASSESS THE PROBABLE IMPACTS OF EXPECTED FUTURE DEVELOPMENT OF TEXAS LIGNITE RESOURCES. THIS MULTI-DISCIPLINARY, POLICY-ORIENTED STUDY WILL CONSIDER POSSIBLE LIGNITE EXTRACTION AND UTILIZATON OPTIONS THROUGH THE YEAR 2000. THE RESEARCH TEAM WILL ATTEMPT TO IDENTIFY AND CHARACTERIZE THE MAJOR ENVIRONMENTAL, SOCIO-ECONOMIC, PUBLIC HEALTH AND INSTITUTIONAL IMPACTS WHICH COULD RESULT FROM THIS PROCESS AND THE POLICY ISSUES CREATED OR AGGREVATED BY THESE IMPACTS. ALTERNATIVE SOLUTIONS TO POLICY PROBLEMS WILL BE OUTLINED WITH PROBABLE CONSEQUENCES OF EACH. THE MAJOR FINAL PRODUCT OF THIS PROJECT WILL BE A FINAL REPORT PRESENTING THE RESULTS OF THE RESEARCH EFFORT IN A FORMAT WHICH WILL BE UNDERSTANDABLE AND USEFUL TO CURRENT DECISION-MAKERS. WORK TO DATE HAS INCLUDED A PRELIMINARY PHASE I REPORT, AND A REVIEW PANEL MEETING TO EVALUATE THIS REPORT AND ASSIST IN PLANNING THE REMAINDER OF THE STUDY AND THE COMPLETION OF A WORK PLAN FOR THE REMAINDER OF THE PROJECT.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved. OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)

SSIE

EPA R806365 01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT: The Health Effects of Air Pollution Abatement

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Lester B. Lave, Professor and Head, Department of Economics, Graduate School of Industrial Administration, Carnegie-Mellon University

NAME AND ADDRESS OF APPLICANT INSTITUTION

Carnegie-Mellon University
Pittsburgh, PA 15213

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

An epidemiological investigation of the effect of air pollution on mortality rates for the general population is the focus of this study; it seeks to isolate the qualitative and quantitative association between particular air pollutants and various mortality rates, controlling for other factors hypothesized to affect mortality. Statistical analysis of more than 100 US cities from 1960 through 1974 will be the basic method. Previous analyses will be replicated with the new data set and attempts will be made to investigate defects in earlier analyses. If forecasts from previously estimated models fail to predict mortality rates in cities or if there is evidence of misspecifaction of the relationship, additional functions will be investigated. Attempts will be made to isolate the effects of individual pollutants and to control for smoking habits. Finally, the best estimates of the effect of air pollution on mortality will be translated into estimates of the benefits of air pollution abatement.

*PROJECT: 004872-THE EFFECTS OF SUSPENDED SEDIMENTS ON THE PENETRATION OF SOLAR RADIATION INTO NATURAL WATERS

STARTING/ COMPLETION DATE : 02/79 - 02/82 : FY79
TASK CODE=K824D-220 **EPA=R806372 ** (GRANT)

EPA OFFICER.: RG ZEPP   EPA/ERL - ATHENS   404-546-3428
INVESTIGATOR.: RC SMITH   UNIV OF CALIFORNIA   SCRIPPS INST OF OCEANOGRAPHY
MILESTONES...: 02/80 -FIRST YEAR INTERIM REPORT
02/81 -SECOND YEAR INTERIM REPORT
02/82 -FINAL REPORT
PROGRAM ID...: (PE-824)   DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE.......: 30-99   OPTICAL PHYSICS
ORDIS CODES..: RECN-004872   SSIE-GMA 5829   EPA -R806372   TASK-K824D-220
ORD -RK10B30-3079   MAND-30-99   PE -824
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE   CATEGORY-RESEARCH   DATA-ORIGINAL   UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE TRANSMISSION OF SOLAR RADIATION IN TURBID NATURAL WATERS WILL BE INVESTIGATED. APPROACH: MATHEMATICAL EQUATIONS WILL BE DEVELOPED AND DATA OBTAINED THAT WILL BE USED TO PREDICT SOLAR SPECTRAL IRRADIANCE AS A FUNCTION OF DEPTH. THE EQUATIONS AND DATA ARE REQUIRED TO MODEL THE PHOTOCHEMICAL TRANSFORMATION OF WATER POLLUTANTS.

*PROJECT: 004731-OPTIMIZING COAGULATION - ADSORPTION FOR HALOFORM AND TOC REMOVAL

STARTING/ COMPLETION DATE : 05/79 - 08/81 : FY79
TASK CODE=C824A-S1T070 **EPA=R806377-01 ** (GRANT)

EPA OFFICER.: LA MOORE   EPA/MERL - CINC   513-684-7228
INVESTIGATOR.: MJ SEMMENS   UNIV OF MINNESOTA   DEPT OF MECH ENG
MILESTONES...: 05/80 -CONTINUATION FUNDING PACKAGE PROCESSED (02 YR)
05/80 -INTERIM REPORT PUBLISHED
05/81 -PROJECT COMPLETED
08/81 -FINAL REPORT PUBLISHED
PROGRAM ID...: (PE-824)   DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE.......: 20-13   DAA FOR DRINKING WATER
20-R05   EPA REGION V
ORDIS CODES..: RECN-004731   SSIE-GMA 5891   EPA -R806377-01   TASK-C824A-S1T070
ORD -RC10B30-2079   MAND-20-13   MAND-20-R05
PE -824   LABT-EET

PROJ STATUS..: PROJECT-ACTIVE   CATEGORY-RESEARCH   DATA-ORIGINAL   UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: USE COAGULANTS (MOSTLY ALUM) FOR VARIOUS TEST CONDITIONS FOR THE REMOVAL OF ORGANIC CARBON AND TRIHALOMETHANE PRECURSORS FROM RIVER WATER, AND THEN FOLLOW WITH ACTIVATED CARBON TREATMENT. APPROACH: FREEZE CONCENTRATE 55 GALLONS OF RIVER WATER, THEN REDILUTE AS NEEDED FOR LABORATORY SCALE SCREENING TESTS. WHATMAN NO. 1 FILTER PAPER IS EXPECTED TO SIMILATE SAND FILTRATION, FOLLOWED BY MINI-CARBON COLUMNS (0.5 CM X APPROX 5 CM).

*PROJECT: 004797-CONFERENCE ON AEROSOLS - ANTHROPOGENIC AND NATURAL - SOURCE AND TRANSPORT
STARTING/ COMPLETION DATE : 10/78 - 07/79 : FY79
TASK CODE=G603A-AA-156 **EPA=R806381 ** (GRANT)

EPA OFFICER.: W WILSON — EPA/ESRL - RTP — 919-541-2551
INVESTIGATOR.: PJ LIOY — NEW YORK UNIV MED CTR — INST OF ENV MED
MILESTONES...: 01/79 -CONFERENCE HELD
07/79 -PROCEEDINGS PUBLISHED
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
FINAL OUTPUT.: PROCEEDINGS PUBLISHED
MANDATE......: 10-02 CLEAN AIR ACT
CURR. RESULTS: CONFERENCE HELD AND PAPERS TO BE EDITED AND ORGANIZED FOR PUBLICATION.

ORDIS CODES..: RECN-004797	SSIE-GMA 5814	EPA -R806381	TASK-G603A-AA-156
ORD -RG10B30-1079	MAND-10-02	PE -603	
	LABT-EPE		

PROJ STATUS..: PROJECT-ACTIVE	CATEGORY-RESEARCH	DATA-ORIGINAL	UPDATED- JUL-SEP 79
	ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: PROVIDE AN EXCHANGE OF CURRENT SCIENTIFIC INFORMATION ON SOURCES AND EFFECTS OF ATMOSPHERIC AEROSOLS. APPROACH: A CONFERENCE WAS ORGANIZED BY THE NEW YORK ACADEMY OF SCIENCES, SPONSORED BY THE ACADEMY, THE AIR POLLUTION CONTROL ASSOCIATION, AND EPA, AND HELD IN NEW YORK IN JANUARY 1979. RESULTS TO DATE: THE CONFERENCE WAS HELD AND PAPERS ARE TO BE EDITED AND ORGANIZED FOR PUBLICATION IN A PROCEEDINGS PUBLICATION.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*
SSIE
EPA R806387-01

TITLE OF PROJECT
Ecological Effects of Strom Runoff in an Urban Stream

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Michael A. Perkins, Research Assistant Professor
Eugene B. Welch, Professor
Quentin J. Stober, Associate Professor

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Washington
Seattle, WA 98195

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objectives of the proposed work are to identify those short and long term impacts associated with storm runoff from an urban area upon the biota of a receiving stream. A further assessment will be made of the realized and/or potential mitigation of those impacts due to storm water management practices within selected subdrainages of the study area.

The approach will be centered around sampling of the periphyton and macroinvertebrate communities of urbanized and non-urbanized streams to determine patterns of spatial/temporal variation and how these may relate to urban runoff.

U.S. ENVIRONMENTAL PROTECTION AGENCY	Form Approved OMB No. 158-R0081
NOTICE OF RESEARCH PROJECT	PROJECT NO. (Do not use this space) SSIE
PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE	EPA R-806391-01-0

TITLE OF PROJECT

HABITAT STRUCTURE AND FISH COMMUNITIES IN WARMWATER STREAMS

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

James R. Karr, Associate Professor
Department of Ecology, Ethology, and Evolution
University of Illinois
Champaign, Illinois 61820

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Illinois
Urbana, Illinois 61801

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The need to control pollution of streams is clear but the mechanism of achieving this control is less clear. Even intense efforts to improve water quality and stream biota will meet with limited success unless efforts are made to improve habitat quality in addition to water quality. Our objectives are to identify proximate and ultimate factors involved in relationships among habitat structure, water quality, land use, food resoucres and the structure of warmwater fish communities. This will be accomplished by intensive study of several watersheds in east-central Illinois.

*PROJECT: 004373-DEVELOPMENT OF DATA FOR SCALE-UP FOR CONTINUOUS PROCESSING OF PYROLYTIC OILS

STARTING/ COMPLETION DATE : 10/78 - 09/79 : FY79
TASK CODE=C818A-05T13 **EPA=R806403-01 ** (GRANT)

EPA OFFICER.: CJ ROGERS EPA/MERL - CINC 513-684-7881
INVESTIGATOR.: JA KNIGHT GEORGIA INST OF TECH ENG EXPER STA
LW ELSTON GEORGIA INST OF TECH ENG EXPER STA

MILESTONES...: 02/79 -COMP. OF STUDY OF 3 PROCESSES FOR SEPARATION OF PYROLYTIC OILS
05/79 -COMPL. OF IN-DEPTH EVALUATION OF ONE SEPARATION PROCESS
08/79 -OBTAIN DATA FOR DESIGN OF A SCALED-UP PILOT
09/79 -FINAL REPORT

PROGRAM ID...: (PE-818) CONTROL TECHNOLOGY

MANDATE......: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE

CURR. RESULTS: LAB SCALE STUDIES FOR PROCESSING OF PYROLYTIC OILS COMPLETED. SCALE-UP TO CONTINUOUS SEPARATION BEING ACCOMPLISHED.

ORDIS CODES..: RECN-004373	SSIE-GMA 5634	EPA -R806403-01	TASK-C818A-05T13
ORD -RC10830-5079	MAND-10-05	MAND-20-14	
PE -818		LABT-EET	

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE BROAD OBJECTIVE OF THIS PROGRAM IS TO MAXIMIZE THE VALUE OF PYROLYSIS OILS OBTAINED BY PYROLYSIS OF AGRICULTURAL, FORESTRY, AND MUNICIPAL RESIDUES AND WASTES SO THAT MAXIMUM RESOURCE RECOVERY AND COMMERCIAL VALUE CAN BE REALIZED FROM THESE MATERIALS. THE SPECIFIC OBJECTIVE OF THIS PHASE OF THE PROGRAM IS TO DEVELOP THE DATA TO DESIGN A PILOT PLANT FOR CONTINUOUS PROCESSING OF PYROLYTIC OILS FOR THE PRODUCTION OF OIL FRACTIONS SUITABLE FOR INDUSTRIAL CHEMICAL APPLICATIONS. APPROACH: THREE SEPARATION SCHEMES BASED ON CURRENT RESULTS HAVE BEEN SELECTED FOR MORE DETAILED INVESTIGATION AT THE BENCH LEVEL. A SINGLE SEPARATION SCHEME WILL BE DEVISED THEN FOR INTENSIVE TESTING AT THE BENCH LEVEL AND INDIVIDUAL STEPS WILL BE TESTED ON A CONTINUOUS BASIS. IN THE LAST PHASE OF THE PROGRAM, A BENCH SCALE SYSTEM WILL BE TESTED ON A CONTINUOUS BASIS TO DEVELOP THE NECESSARY DATA FOR SCALING UP THE PROCESS. THE FINAL RESULT WILL BE THE DESIGN OF A PILOT PLANT FOR TESTING THE CONTINUOUS PROCESSING OF PYROLYTIC OILS TO PRODUCE OIL FRACTIONS SUITABLE FOR TESTING FOR INDUSTRIAL CHEMICAL APPLICATIONS. RESULTS TO DATE: THE LAB SCALE STUDIES FOR THE PROCESSING OF PYROLYTIC OILS HAVE BEEN COMPLETED. THE SCALE-UP TO CONTINUOUS SEPARATION OF PYROLYTIC OILS IS BEING ACCOMPLISHED CURRENTLY.

*PROJECT: 004801-ORIGINS AND BEHAVIOR OF POLLUTION AEROSOLS

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                  STARTING/ COMPLETION DATE : 01/79 - 01/82 :   FY79
                  TASK CODE=G603A-AC-048 **EPA=R806404-01  ** (GRANT)
EPA  OFFICER.: H  BARNES              EPA/ESRL - RTP               919-541-2184
INVESTIGATOR.: SK FRIEDLANDER         GRADUATE SCHOOL              UNIVERSITY OF CALIFORNIA
MILESTONES...: 04/81 -REPORT ON AEROSOL FORMATION FOR ORGANICS AND NITRATES
               01/82 -ORD FINAL REPORT
PROGRAM ID...: (PE-603 )           HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
MANDATE......: 10-02      CLEAN AIR ACT
CURR. RESULTS: LAB EQUIPMENT ASSEMBLED AND STUDIES BEGUN MAY 79.
ORDIS CODES..: RECN-004801         SSIE-GMA  5817        EPA -R806404-01       TASK-G603A-AC-048
               ORD -RG10B30-1079   MAND-10-02            PE  -603
                                   LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE      CATEGORY-RESEARCH     DATA-ORIGINAL         UPDATED-  JUL-SEP 79
                                   ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: TO INVESTIGATE THE FORMATION OF NITRATE AND ORGANIC COMPOUND CONTAINING AEROSOLS IN AN EXPERIMENTAL LABORATORY SITUATION; TO TEST THE AEROSOL THEORY DEVELOPED BY THE PRINCIPAL INVESTIGATOR FOR THE NITRATE AND ORGANIC AEROSOLS. APPROACH: BALLOON REACTOR STUDIES WILL BE CARRIED OUT FOR NITRATES AND ORGANICS. ATMOSPHERIC AIR WILL BE SPIKED WITH PPM LEVELS OF NOX, PROPYLENE AND AMMONIA. SIZE DISTRIBUTION OF AEROSOLS FORMED AND THE NITRATE AEROSOL FORMATION RATE DETERMINED. RESULTS TO DATE: GRANT BEGAN 1/4/79. LABORATORY EQUIPMENT HAS BEEN ASSEMBLED AND EXPERIMENTAL STUDIES WILL BEGIN IN MAY 1979.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R 806412-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Stress-Ethylene Production as a Measure of Air Pollutant Phytotoxicity

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. Lyle E. Craker
Associate Professor
Dept. of Plant and Soil Sciences

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Massachusetts, Amherst, Ma. 01003

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of this work is to develop stress-induced ethylene production as a rapid, accurate test of air pollutant phytotoxicity and to suggest a technique for quickly screening numerous plants for sensitivity to air pollutants.

The proposed work would be divided into two related phases. The first phase would involve the development of a rapid quantitative test of air pollutant phytotoxicity by using stress-induced ethylene production from 5 to 14 day old seedlings as the basis of measurement. The second phase would relate pollution-induced injury of plants to production of pollution-induced stress-ethylene by seedlings of these plants.

*PROJECT: 005178-STUDY OF THE WATER DISTRIBUTION SYSTEM AS A POTENTIAL SOURCE OF MUTAGENS/CARCINOGENS IN DRINKING WATERS
STARTING/ COMPLETION DATE : 02/79 - 02/81 : FY79
TASK CODE=D823B-010B **EPA=R806413-01 ** (GRANT)

EPA OFFICER.: FC KOPFLER — EPA/HERL - CINC — 513-684-7451
INVESTIGATOR.: J SAXENA — SYRACUSE RESEARCH CORP
DK BASU — SYRACUSE RESEARCH CORP
DJ SCHWARTZ — SYRACUSE RESEARCH CORP
MILESTONES...: 02/79 -COMPLETE ANALYSIS OF 9 WATER SUPPLIES
02/81 -DETERMINE MUTAGENIC/CARCINOGENIC POTENTIAL OF PUBLIC DRINKING WATERS & ASSESS
PROGRAM ID...: (PE-823) HEALTH EFFECTS
FINAL OUTPUT.: DETERMINE MUTAGENIC/CARCINOGENIC POTENTIAL OF PUBLIC DRINKING WATERS & ASSESS DISTRIBUTION PROCESS'S CONTRIBUTION.
MANDATE......: 10-15 SAFE DRINKING WATER ACT
ORDIS CODES..: RECN-005178 SSIE-GMA 6180 EPA -R806413-01 TASK-D823B-010B
ORD -RD10B30-1079 MAND-10-15 PE -823
LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE PROPOSED STUDY IS CONCERNED WITH ASSESSING THE MUTAGENIC/CARCINOGENIC POTENTIAL OF DRINKING WATER REACHING THE PUBLIC, AND TO ASSESS THE ROLE OF THE DISTRIBUTION PROCESS IN CONTRIBUTING THESE SUBSTANCES. THE SAMPLING LOCATIONS SELECTED FOR THIS STUDY REPRESENT THE LARGEST WATER SUPPLIES WITHIN THE 18 SELECTED COUNTIES IN THE U.S. THE AREAS THESE SUPPLIES SERVE REPRESENT BOTH HIGH AND LOW CANCER INCIDENCE AREAS.APPROACH: THE OVERALL MUTAGENIC/CARCINOGENIC ACTIVITY SHALL BE DETERMINED UTILIZING BIOASSAY SYSTEMS E.G. AMES SALMONELLA ASSAY. THE ANALYSIS SHALL BE PERFORMED ON RAW WATER, FINISHED WATER AT THE TREATMENT PLANT, AND ON SAMPLES COLLECTED FROM VARIOUS POINTS IN THE DISTRIBUTION SYSTEM REPRESENTING EXPOSURE TO DIFFERENT TYPES OF DISTRIBUTION PIPES AND DIFFERENT LENGTHS OF PIPES. THE ASSAY SHALL BE PERFORMED ON THE WATERS AND ON THE ORGANIC FRACTION RECOVERED FROM WATER USING POLYURETHANE FOAM COLUMNS. IN VIEW OF THE POTENTIAL OF DISTRIBUTION PIPES FOR ADDITION OF POLYNUCLEAR AROMATIC HYDROCARBONS, THE PRESENCE OF THESE CHEMICALS IN VARIOUS WATERS SHALL ALSO BE EXAMINED.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

Form Approved
OMB No. 158-R0081

PROJECT NO. (Do not use this space)
SSIE
EPA 8806414-01

TITLE OF PROJECT
Validation of Samplers for Inhaled Particulate Matter

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

J. J. Wesolowski, Principal Investigator; W. John, Project Director; Susanne Hering, Aerosol Physicist, California Dept. of Health Services, Berkeley, CA

J. B. Wedding, Aerosol Scientist, Department of Civil Engineering, Colorado State University, Fort Collins, CO

NAME AND ADDRESS OF APPLICANT INSTITUTION

California Department of Health Services
2151 Berkeley Way
Berkeley, CA 94704

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Size-selective samplers for inhaled particulate matter are to be validated with laboratory-generated aerosol. The samplers are the virtual dichotomous impactors developed under the auspices of the U.S. Environmental Protection Agency including an automated version manufactured by Beckman Instruments and a manual version manufactured by Sierra Instruments. The samplers, equipped with an inlet designed to cutoff at about 15 μm particle diameter, produce filter samples of the coarse particle fraction (> 2.5 μm) and the fine fraction (< 2.5 μm).

The sampling efficiencies and wall losses will be measured using both liquid and solid particles from 0.3 to 30 μm diameter. The uniformity of the filter deposits will be measured. Sampling efficiencies of the inlet will be measured in a wind tunnel for particle sizes from 5 to 50 μm. The wind speed will be varied up to 12 m/s and the turbulent intensity varied to determine the effect on sampling efficiency.

U.S. ENVIRONMENTAL PROTECTION AGENCY **NOTICE OF RESEARCH PROJECT** *(Please read reverse before completing)*	*Form Approved* *OMB No. 158-R0081* PROJECT NO. *(Do not use this space)* SSIE
PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE	EPA R804422-01

TITLE OF PROJECT <u>Tradescantia</u> "MCN-in-Tetrad" mutagen test for on-site monitoring and <u>further validation of the test system</u>

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Te-Hsiu Ma, Department of Biological Sciences, Western Illinois University.

NAME AND ADDRESS OF APPLICANT INSTITUTION

Western Illinois University, West Adams Street, Macomb, IL 61455

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Micronuclei (MCN) formation in meiotic tetrads of <u>Tradescantia</u> is an indication of chromosome breakage induced by physical or chemical mutagens. A "MCN-in-Tetrad" mutagen test system has been proved to be highly efficient for testing air or water pollutants as well as low dose radiation. In this project, "MCN-in-Tetrad" test will be used as an on-site monitoring system in public parking garages, around grain silos and coal burning power plants for air pollutants, and used in laboratory testing of known mutagens, heavy metal containing soil or water from near-by areas of smelters or industrial sites. Plant cuttings bearing the appropriate stage of meiosis will be exposed to the mutagens in either gaseous or liquid forms. Frequencies of MCN (MCN/100 tetrads) will be scored from microslides prepared from tetrad containing flower buds to determine mutagenic effects.

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*PROJECT: 004851-SYMPOSIUM AND MODELING OF POLLUTANT TRANSPORT IN RECEIVING WATERS

                     STARTING/ COMPLETION DATE : 10/78 - 08/80 :    FY79
                     TASK CODE=K609A-413     **EPA=R806425      ** (GRANT)
 EPA  OFFICER.: TO BARNWELL               EPA/ERL - ATHENS                   404-546-3175
 INVESTIGATOR.: HB FISHER                 UNIV OF CALIFORNIA                 SCH OF ENG
 MILESTONES...: 08/80 -HOLD SYMPOSIUM
 PROGRAM ID...: (PE-609 )          HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE OF POLLUTANTS
 MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
 ORDIS CODES..: RECN-004851           SSIE-GMA  5825        EPA -R806425         TASK-K609A-413
                ORD -RK10B30-1079     MAND-10-01            PE  -609
                                      LABT-EPE

 PROJ STATUS..: PROJECT-ACTIVE        CATEGORY-RESEARCH     DATA-ORIGINAL        UPDATED-  JUL-SEP 79
                                      ACCESS-PUBLIC
 ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THE SYMPOSIUM IS TO REVIEW THE STATE-OF-THE-ART OF MATHEMATICAL AND
                 PHYSICAL MODELING OF POLLUTANT TRANSPORT IN RIVERS, LAKES, RESERVOIRS, ESTUARIES, AND NEAR-SHORE
                 COASTAL AREAS, AND THE RELATIONSHIP BETWEEN TRANSPORT AND BIOCHEMICAL MODELS. APPROACH: THE
                 SYMPOSIUM WILL BE UNDER THE DIRECTION OF AN INTERNATIONAL SCIENTIFIC COMMITTEE AND IS SPONSORED BY
                 THE COMMITTEE ON FUNDAMENTALS OF THE INTERNATIONAL ASSOCIATION FOR HYDRAULIC RESEARCH AND THE
                 COMMITTEE ON HYDROLOGIC TRANSPORT OF POLLUTANTS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS. THE
                 SCIENTIFIC COMMITTEE WILL SELECT 12 PAPERS TO BE PRESENTED OVER A PERIOD OF THREE DAYS, ALLOWING
                 ADEQUATE TIME FOR DETAILED DISCUSSION. THE PROCEEDINGS WILL BE PUBLISHED BY A COMMERCIAL PUBLISHING
                 HOUSE. THE PROCEEDINGS ARE EXPECTED TO CONSTITUTE A STATE-OF-THE-ART PRESENTATION OF MODELING OF
                 HYDROLOGIC SYSTEMS.

*PROJECT: 005150-COHERENT ANTI-STOKES RAMAN DETECTION SYSTEM FOR A LIQUID CHROMATOGRAPHIC
                 IDENTIFICATION (ABBREV)
                     STARTING/ COMPLETION DATE : 01/79 - 01/81 :    FY79
                     TASK CODE=K824D-79-107 **EPA=R806430      ** (GRANT)
 EPA  OFFICER.: LV AZARRAGA               EPA/ERL - ATHENS                   404-546-3552
 INVESTIGATOR.: LA CARREIRA               UNIV OF GEORGIA                    CHEM DEPT
 MILESTONES...: 01/80 -ANNUAL REPORT
                01/81 -ANNUAL REPORT
 PROGRAM ID...: (PE-824 )          DRINK WATER TREATMENT & GROUND WATER PROT
 MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
 CURR. RESULTS: THE VIDICON SUCCESSFULLY INTERFACED WITH PROTOTYPE
                SYSTEM.  SOFTWARE WRITTEN; DATA CONNECTION FROM
                VIDICON SUCCESSFULLY TESTED.
 ORDIS CODES..: RECN-005150           SSIE-GMA  6241        EPA -R806430         TASK-K824D-79-107
                ORD -RK10B30-1079     MAND-10-01            PE  -824
                                      LABT-EPE

 PROJ STATUS..: PROJECT-ACTIVE        CATEGORY-RESEARCH     DATA-ORIGINAL        UPDATED-  OCT-DEC 79
                                      ACCESS-PUBLIC
 ABSTRACT.....: OBJECTIVE: TO ENHANCE THE ANALYTICAL CAPABILITIES OF THE PROTOTYPE LC-CARS SYSTEM THAT WAS
                 PREVIOUSLY DEVELOPED. APPROACH: A VIDICON WILL BE INCORPORATED INTO THE PROTOTYPE SYSTEM FOR THE
                 RAPID MEASUREMENT OF THE UV-VIS ABSORPTION, FLUORESCENCE AND FLUORESCENCE-EXCITATION SPECTRA.
                 OPTIMIZATION OF LC AND RECOVERY STUDIES WILL BE MADE TO ENABLE DIRECT ANALYSIS OF POLLUTED WATERS.
                 CORRELATION RAMAN TECHNIQUE WILL BE STUDIED TO IMPROVE CARS SENSITIVITY.
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U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. (Do not use this space)

SSIE

EPA R 806430-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT A Combined Absorption, Fluorescence, Fluorescence-Excitation, and Coherent Anti-Stokes Raman Detection System for a Liquid Chromatographic Identification of Environmental Pollutants

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

L. A. Carreira
Assistant Professor

L. B. Rogers
Graham Perdue Professor of Chemistry

Department of Chemistry

NAME AND ADDRESS OF APPLICANT INSTITUTION
Department of Chemistry
University of Georgia
Athens, Georgia 30602

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The proposed analytical system, which combines four spectroscopic techniques with liquid chromatographic retention time should give highly specific identification of organic pollutants. Most compounds which absorb in the ultraviolet-visible region of the spectrum should give spectra useful for identification at micromolar levels using the absorption and Raman techniques. For those compounds that fluoresce, the limit should be at least three orders of magnitude lower using fluorescence spectra combined with excitation spectra.

A commercially available, ultraviolet sensitized silicon intensified vidicon detector will be used to obtain absorption, fluorescence-excitation, and fluorescence spectra in combination with an existing computer-automated CARS-liquid chromatographic apparatus. In addition, a new coherent Raman gain technique will be explored in electronic resonance to enhance the Raman sensitivity for many compounds by at least an order of magnitude, and scouting techniques for speeding up the evaluation of preconcentration procedures will be explored.

*PROJECT: 004828-THE EFFECT OF COLLISIONAL LIFETIME IN OPTOACOUSTIC DETECTION OF POLLUTANT GASES

STARTING/ COMPLETION DATE : 02/79 - 02/80 : FY79
TASK CODE=G833D-EB-043 **EPA=R806439-01 ** (GRANT)

EPA OFFICER.: WA MCCLENNY   EPA/ESRL - RTP   919-541-3158
INVESTIGATOR.: W CHRISTIAN   DEPT. OF PHYSICS   ALLEGHENY COLLEGE
MILESTONES...: 02/80 -ORD REPORT ON OPTOACOUSTIC DETECTION OF POLLUTANTS
PROGRAM ID...: (PE-833)   INSTRUMENTATION & MEASUREMENTS
FINAL OUTPUT.: REPORT ON OPTOACOUSTIC DETECTION OF POLLUTANTS
MANDATE......: 10-02   CLEAN AIR ACT
ORDIS CODES..: RECN-004828   SSIE-GMA 5788   EPA -R806439-01   TASK-G833D-EB-043
ORD -RG10B30-1079   MAND-10-02   PE -833
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE   CATEGORY-RESEARCH   DATA-ORIGINAL   UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: TO DETERMINE THE RELATIONSHIP BETWEEN OPTOACOUSTIC SIGNAL, ABSORPTION COEFFICIENT, COLLISIONAL LIFETIME, CHOPPING FREQUENCY, AND PRESSURE IN AN OPTOACOUSTIC CELL. APPROACH: THE OPTOACOUSTIC CELL WILL BE CALIBRATED USING A PIEZOELECTRIC CRYSTAL TO INDUCE PRESSURE VARIATIONS IN THE CELL. CARBON DIOXIDE, SULFUR HEXAFLUORIDE, NITROUS OXIDE, ETHYLENE, VARIOUS FLUOROCARBONS AND METHYLHALIDES WILL THEN BE INVESTIGATED. PARTICULAR ATTENTION WILL BE GIVEN TO GASES WHICH DEACTIVATE IN A STEPWISE MANNER AND TO GASES WHICH EXHIBIT KINETIC COOLING EFFECTS.

*PROJECT: 005128-PERFORMANCE CHARACTERISTICS OF PACKAGE WATER TREATMENT PLANTS

STARTING/ COMPLETION DATE : 04/79 - 03/81 : FY79
TASK CODE=C824A-S1T078 **EPA=R806449-01 ** (GRANT)

EPA OFFICER.: TJ SORG   EPA/MERL - CINC   513-684-7370
INVESTIGATOR.: JM MORAND   UNIV OF CINCINNATI   SCH OF ENG/ELEC ENG TECH
MILESTONES...: 04/79 -COLLECT TREATMENT INFORMATION FROM EQ. MANUFACTURERS & STATE AGENCIES
04/79 -SELECT 4 STUDY SITES
06/79 -ESTABLISH DATA COLLECTION SYSTEM AT FOUR SITES
09/79 -ESTABLISH DATA COLLECTION SYSTEM AT FOUR ADDITIONAL SITES
09/80 -COMPLETE DATA COLLECTION
PROGRAM ID...: (PE-824)   DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 10-15   SAFE DRINKING WATER ACT
CURR. RESULTS: FOUR PACKAGE PLANT SYSTEMS SELECTED FOR INITIAL START-UP PERIOD
ORDIS CODES..: RECN-005128   SSIE-GMA 6237   EPA -R806449-01   TASK-C824A-S1T078
ORD -RC10B30-1079   MAND-10-15   PE -824
LABT-EET

PROJ STATUS..: PROJECT-ACTIVE   CATEGORY-RESEARCH   DATA-ORIGINAL   UPDATED- OCT-DEC 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THIS PROJECT WILL EVALUATE THE PERFORMANCE CHARACTERISTICS OF SEVERAL EXISTING PACKAGE WATER TREATMENT PLANTS IN THE MID-WEST, TREATING VARIOUS TYPES OF SURFACE AND GROUND WATERS. APPROACH: SIX TO TEN TREATMENT PLANTS WILL BE CONTACTED TO PARTICIPATE IN THE STUDY. OPERATIONAL DATA WILL BE COLLECTED OVER A ONE YEAR PERIOD TO MONITOR THE PERFORMANCE OF THESE PLANTS TO TREAT RAW WATER WITH CHANGING CHARACTERISTICS.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

Form Approved
OMB No. 158-R0081

PROJECT NO. (Do not use this space)
SSIE
EPA R-806440-01-0

TITLE OF PROJECT ICRP Meetings (International Commission on Radiological Protection)

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Professor B. Lindell, Chairman, ICRP.

Dr. F.D. Sowby, Scientific Secretary, ICRP.

NAME AND ADDRESS OF APPLICANT INSTITUTION
International Commission on Radiological Protection,
Clifton Avenue,
Sutton, Surrey, England SM2 5PU.

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

1. In 1978 the Commission established a working program for its committees and task groups. The Objective of the program is to produce follow-up advice on the Commission's Recommendations, which were published in 1977 as ICRP Publication 26.

2. During 1978 and early 1979 the committees and task groups will initiate their work, and will report to the Commission before its meeting planned for June 1979. At that meeting the Commission will review the current state of work being performed by committees and task groups, and make any necessary adjustments to the program of work.

3. Subjects receiving urgent review in the current program of work include the following:

   Non-stochastic effects of irradiation,

   Risks and RBEs of high-LET radiation for carcinogenesis,

   Somatic and genetic risks of irradiation at low doses,

   Risks to the human embryo and foetus - with special reference to occupational exposure of women,

   Doses to patients from radiopharmaceuticals,

   Protection in all fields in which ionising radiations are employed in medicine,

   The practical application of the Commission's recommendations.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R806447-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Immunochemical Analysis of Pesticides and Surfactants

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Bruce D. Hammock, Principal Investigator, Assistant Professor of Entomology, Department of Entomology

Richard Taylor, Assistant Research Entomologist, Department of Entomology

NAME AND ADDRESS OF APPLICANT INSTITUTION

The Regents of the University of California
University of California, Riverside
Riverside, California 92521

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data)*. In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of this project is to evaluate the adaptability of immunochemical technology to environmental and pesticide chemistry. Several pesticides which pose some analytical problem will be used as models. Such compounds include the phenyl ureas, various hydrocarbon insecticides, and optically active insecticides such as the pyrethroids. Of prime interest will be the development of analytical methods for surfactants in pesticide formulations. The initial target will be nonionic detergents of the ethoxylated alkylphenol type.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R806448-01-0

TITLE OF PROJECT: A program to develop a Computerized Financial Reporting System, that would have universal application to the Water Supply Industry.

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Mr. Victor C. Fender, General Manager
Kenton County Water District No. 1
3049 Dixie Highway
Ft. Mitchell, KY 41017

NAME AND ADDRESS OF APPLICANT INSTITUTION

The Kenton County, Kentucky, Water District No. 1

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

OBJECTIVE:

To develop a financial reporting system that has universal application to the water supply industry, but that specifically is applied to the Kenton County, Kentucky, Water District No. 1 (DISTRICT). This system must be compatible with the NARUC account numbering system and must function on an IBM 370 series computer in COBOL language. It must also be compatible with the standardized cost accounting system developed by the EPA, and be adaptable to an IBM systems 34 computer.

APPROACH:

An evaluation will be conducted to identify the specific outputs required by Kenton County and compare these outputs to the requirements of two other water utilities which are significantly different than the DISTRICT. From the outputs, specific inputs will be identified and procedures will be established to collect the source information. Computer programs will then be designed which will take the input source data, process the data, and produce the required outputs.

PROGRESS:

In cooperation with the U.S. Environmental Protection Agency Drinking Water Research Division in Cincinnati, the DISTRICT recently was the selected utility in the development and implementation of a computerized cost accounting system, which is functional and provides excellent cost information on a timely basis. This financial reporting system when fully developed will function with the cost accounting system producing the total spectrum of financial and cost information required by the water supply industry. It will require an estimated eight months from the issue of the grant to have the financial reporting system operational.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R806449-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Performance Characteristics of Package Water Treatment Plants

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

James M. Morand, Professor of Civil and Environmental Engineering

Janet Rickabaugh, Instructor in Environmental Engineering

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Cincinnati
Cincinnati, Ohio 45221

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Thebasic objectives of this proposed research investigation are to: (1) determine how prevalent package plants are for treating public water supplies in the U.S.; (2) make a detailed study of the operational and performance characteristics of a number of existing package water treatment plants serving communities and recreational areas and using various sources of water; (3) determine deterioration of the quality of the water subsequent to treatment and prior to consumption; (4) modify the treatment process and determine the effects on effluent quality; (5) obtain operation, maintenance, and equipment costs as well as manpower requirements; (6) analyze the possibility of preparing standardized designs for the building housing the package plant.

Procedures that will enable the above to be accomplished include: (1) Contact the treatment plant manufacturers and the individual state agencies to determine how widespread is the use of package plants, to discuss the state-of-the-art of plant design, and the future directions of package plant technology. (2) determine the quality of output water over the duration of the treatment cycle, including the effect of start-up and shut-down; (3) determine the sensitivity of plant output quality to coagulant dosage; (4) determine the effects of pre and post chlorination vs. post chlorination; (5) evaluate automatic vs. manual backwashing; (6) investigate GAC prior to disinfection and subsequent to disinfection; (7) collect samples at selected points in the distribution system to determine water quality deterioration; (8) investigate several building designs incorporating different building materials and construction. The building types will range from pre-engineered steel buildings that are readily available for assembly on site to conventional frame buildings industry for construction with locally economical building materials.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE R-806457

EPA

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Ohio River Basin Energy Study Phase II: Social Values

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Harry R. Potter
Associate Professor of Sociology
Department of Sociology and Anthropology

NAME AND ADDRESS OF APPLICANT INSTITUTION

Purdue University
West Lafayette, IN 47907

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The purpose of this study is to examine the relationship of social values to the policy choices that govern future energy development in the Ohio River Basin Energy Study (ORBES) region. The social values to be examined are those relevant to the alternative futures/scenarios being developed by ORBES. These include (a) values that are embedded in the scenarios as driving forces, (b) those that are likely to affect siting decisions, and (c) those that likely to be affected by such events. Two broad categories of values are (1) those related to quality of life or life style such as urban vs. agarian values, residential preferences, and evnironmental quality vs./and economic growth, and (2) those related to social control, for example locus of decision making, land use policy, citizen participation and confidence in technocracy. Four criteria to characterize and differentiate the values are extensiveness, duration, intensity and their distribution among the population. Two alternative sources of secondary data will be used. One is to synthesize and interpret existing findings in reports and papers. A second is to acquire existing data sets, which are then analyzed by the project staff. An important criterion in the selection of data is the extent to which it is in a consistent form across the study region.

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*PROJECT: 004838-MONITORING THE IMPACTS OF GEOTHERMAL DEVELOPMENT ON GROUNDWATER SYSTEMS

                    STARTING/ COMPLETION DATE : 04/79 - 10/83 :   FY79
                    TASK CODE=J827B-60     **EPA=R806457     ** (GRANT)
 EPA  OFFICER.: DB GILMORE                EPA/EMSL - LAS VEGAS             702-736-2969
 INVESTIGATOR.: J  HESS                   DESERT RESEARCH INST.            UNIVERSITY OF NEVADA
 MILESTONES...: 10/83 -GEOTHERMAL ENVIRONMENTAL IMPACT ASSESSMENT
 PROGRAM ID...: (PE-827 )          ENV IMPACT OF CONV & ADV ENERGY SYSTEMS
 FINAL OUTPUT.: GEOTHERMAL ENVIRONMENTAL IMPACT ASSESSMENT
 MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
                10-03     TOXIC SUBSTANCES CONTROL ACT
 ORDIS CODES..: RECN-004838          SSIE-GMA  5835        EPA -R806457        TASK-J827B-60
                ORD -RJ10B30-1079    MAND-10-01            MAND-10-03
                PE  -827                                   LABT-MTS

 PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH     DATA-ORIGINAL       UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
 ABSTRACT.....: OBJECTIVE: TO VALIDATE PUBLISHED GUIDELINES FOR MONITORING THE IMPACT OF GEOTHERMAL RESOURCE
                 DEVELOPMENT IN GROUNDWATER SYSTEMS. APPROACH: TO APPLY THESE GUIDELINES TO THE ROOSEVELT HOT
                 SPRINGS, UTAH KGRA OVER A FOUR YEAR PERIOD.

*PROJECT: 004704-GROUNDWATER MONITORING FOR GEOTHERMAL DEVELOPMENT

                    STARTING/ COMPLETION DATE : 01/79 - 01/83 :   FY79
                    TASK CODE=B827B-920    **EPA=R806457-01  ** (GRANT)
 EPA  OFFICER.: R  HARTLEY                EPA/IERL - CINC                  513-684-4334
 INVESTIGATOR.: JW HESS                   DESERT RESEARCH INST.            UNIVERSITY OF NEVADA
 PROGRAM ID...: (PE-827 )          ENV IMPACT OF CONV & ADV ENERGY SYSTEMS
 MANDATE......: 10-02     CLEAN AIR ACT
 ORDIS CODES..: RECN-004704          SSIE-GMA  5758        EPA -R806457-01     TASK-B827B-920
                ORD -RB10B30-1079    MAND-10-02            PE  -827
                                     LABT-EET

 PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH     DATA-ORIGINAL       UPDATED-  JUL-SEP 79
                                     ACCESS-PUBLIC
 ABSTRACT.....: OBJECTIVE: THE PURPOSE OF THIS INVESTIGATION IS TO VALIDATE AND IMPROVE A METHODOLOGY FOR DETECTING,
                 MONITORING AND PREDICTING THE LONG-TERM EFFECTS OF GEOTHERMAL DEVELOPMENT ON THE GROUNDWATER
                 ENVIRONMENT. APPROACH: THE OBJECTIVE WILL BE ACCOMPLISHED BY DESIGNING, IMPLEMENTING, OPERATING,
                 AND MODIFYING A MONITORING PLAN AT THE ROOSEVELT HOT SPRINGS GEOTHERMAL RESOURCE AREA IN BEAVER
                 COUNTY, UTAH.
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*PROJECT: 004843-FINE PARTICULATE MONITORING IN THE WESTERN ENERGY RESOURCE DEVELOPMENT
                 AREA
                   STARTING/ COMPLETION DATE : 01/79 - 01/81 :    FY79
                   TASK CODE=J833C-83      **EPA=R806459-01  ** (GRANT)
  EPA  OFFICER.: M  PITCHFORD              EPA/EMSL - LAS VEGAS              702-736-2969
  INVESTIGATOR.: T  CAHILL                 DEPT. OF PHYSICS                  UNIVERSITY OF CALIFORNIA
  MILESTONES...: 07/79 -DATA COLLECTION, NETWORK ESTABLISHED
                 07/80 -DATA COLLECTION COMPLETED
                 01/81 -FINAL REPORT DESCRIBING OPERATIONS DATA
  PROGRAM ID...: (PE-833 )          INSTRUMENTATION & MEASUREMENTS
  FINAL OUTPUT.: REPORT DESCRIBING OPERATIONS & DATA
  MANDATE......: 10-02      CLEAN AIR ACT
  ORDIS CODES..: RECN-004843        SSIE-GMA  5832       EPA -R806459-01      TASK-J833C-83
                 ORD -RJ10B30-1079  MAND-10-02           PE  -833
                                    LABT-MTS

  PROJ STATUS..: PROJECT-ACTIVE     CATEGORY-RESEARCH    DATA-ORIGINAL        UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: ESTABLISH A BASELINE OF AIR AMBIENT FINE PARTICULATE DATA IN THE WESTERN ENERGY RESOURCE DEVELOPMENT AREA. APPROACH: A FORTY-STATION FINE PARTICULATE SAMPLING NETWORK WILL BE DEPLOYED OVER THE STATES OF ARIZONA, NEW MEXICO, COLORADO, UTAH, WYOMING, NORTH DAKOTA, MONTANA, AND SOUTH DAKOTA. THE MASS AND ELEMENTAL COMPOSITION OF AEROSOLS IN TWO SIZE RANGES (LESS THAN 2.5 MICRON, LESS THAN 15 MICRON) WILL BE DETERMINED ON THE TWICE-WEEKLY SAMPLES AT EACH STATION. CORRELATIONS WILL BE DEVELOPED WITH METEOROLOGICAL DATA AND OTHER AIR QUALITY MEASUREMENTS (E.G., VISIBILITY).

*PROJECT: 004715-REDUCTION OF TOXIC METALS CONCENTRATIONS IN MUNICIPAL WASTEWATER TREATMENT SLUDGES
STARTING/ COMPLETION DATE : 02/79 - 10/81 : FY79
TASK CODE=C821B-S5AE13 **EPA=R806467 ** (GRANT)

EPA OFFICER.:	SA HANNAH	EPA/MERL - CINC		513-684-7651
INVESTIGATOR.:	J HUANG	UNIV OF MISSOURI		SCH OF ENG
	E BOLTER	UNIV OF MISSOURI		SCH OF ENG
	R SANDERS	UNIV OF MISSOURI		SCH OF ENG

MILESTONES...: 01/80 -COMPLETE FEASIBILITY STUDY
10/81 -REPORT ON EVALUATION OF PROCESS
PROGRAM ID...: (PE-821) URBAN SYSTEMS & TOXICS RESIDUAL MANAGEMENT
FINAL OUTPUT.: REPORT ON EVALUATION OF PROCESS
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-12 DAA FOR WATER PROGRAM OPERATIONS
CURR. RESULTS: EQUIPMENT BEING FABRICATED TO GRANTEES SPECIFICATIONS.

ORDIS CODES..:	RECN-004715	SSIE-GMA 5874	EPA -R806467	TASK-C821B-S5AE13
	ORD -RC10B30-5079	MAND-10-01	MAND-20-12	
	PE -821		LABT-EET	
PROJ STATUS..:	PROJECT-ACTIVE	CATEGORY-RESEARCH ACCESS-PUBLIC	DATA-ORIGINAL	UPDATED- JUL-SEP 79

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THE PROJECT IS TO PRECIPITATE AND REMOVE TOXIC METALS FROM MUNICIPAL WASTEWATER WITHOUT SIMULTANEOUSLY REMOVING THE LARGELY ORGANIC SUSPENDED AND SETTLEABLE SOLIDS. PROPOSED APPLICATION OF THE PROCESS WOULD BE FOR PRETREATMENT OF MUNICIPAL WASTEWATER AHEAD OF CONVENTIONAL TREATMENT TO REMOVE SOLUBLE METALS INTO A RELATIVELY SMALL VOLUME OF GRANULAR PRECIPITATE LEAVING THE PRIMARY AND SECONDARY WASTEWATER TREATMENT SLUDGES WITH A LOWER METALS CONTENT AND THEREBY MORE SUITABLE FOR AGRICULTURAL USE. APPROACH: AN UPFLOW EXPANDED SAND BED WILL BE USED WITH LIME FEED TO NUCLEATE PRECIPITATION OF METALS, CALCIUM CARBONATE AND CALCIUM HYDROXYAPATITE ON THE SAND GRAINS. BECAUSE THE OPERATION WILL USE AN EXPANDED MOVING BED AND A PH LOWER THAN REQUIRED TO PRECIPITATE MAGNESIUM HYDROXIDE, MOST OF THE SEWAGE SOLIDS ARE NOT EXPECTED TO ACCUMULATE WITHIN THE CONTACTOR. RESULTS TO DATE: A GRANT HAS BEEN AWARDED AND EQUIPMENT IS BEING FABRICATED TO THE GRANTEE'S SPECIFICATIONS.

*PROJECT: 004393-IMPROVED PERFORMANCE OF RECTANGULAR SECONDARY CLARIFIERS THROUGH IMPROVEMENTS IN HYDRAULIC EFFICIENCY
STARTING/ COMPLETION DATE : 01/79 - 08/79 : FY79
TASK CODE=C821B-02TC5 **EPA=R806477 ** (GRANT)

EPA OFFICER.: JH BENDER EPA/MERL - CINC 513-684-7607
INVESTIGATOR.: W BANKS HOLLY HILL CITY GOVERNMENT
R CROSBY CROSBY YOUNG & ASSOCIATES

MILESTONES...: 03/79 -INITIAL DYE STUDIES COMPLETED
04/79 -MODIFICATIONS COMPLETED
08/79 -PERFORMANCE TEST COMPLETED

PROGRAM ID...: (PE-821) URBAN SYSTEMS & TOXICS RESIDUAL MANAGEMENT
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: INITIAL DYE STUDIES SHOWED SEVERE SHORT CIRCUITING WITHIN CLARIFIER. MODIFICATIONS INSTALLED AND EVALUATION UNDERWAY. INITIAL RESULTS INDICATE 50% IMPROVEMENT IN EFFLUENT QUALITY FOR MODIFIED CLARIFIER.

ORDIS CODES..:	RECN-004393	SSIE-GMA 5631	EPA -R806477	TASK-C821B-02TC5
	ORD -RC10830-1079	MAND-10-01	PE -821	
		LABT-EET		

PROJ STATUS..:	PROJECT-ACTIVE	CATEGORY-RESEARCH	DATA-ORIGINAL	UPDATED- JUL-SEP 79
		ACCESS-PUBLIC		

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS PROJECT IS TO EVALUATE THE HYDRAULIC CHARACTERISTICS OF RECTANGULAR ACTIVATED SLUDGE SECONDARY CLARIFIERS AND DEVELOP METHODS FOR IMPROVING THESE HYDRAULIC CHARACTERISTICS. IMPROVEMENTS IN CLARIFIER HYDRAULICS WILL BE RELATED TO IMPROVED EFFLUENT QUALITY. APPROACH: ONE OF THE RECTANGULAR SECONDARY CLARIFIERS AT HOLLY HILL WILL BE MODIFIED AFTER INITIAL DYE STUDIES TO DETERMINE THE EXISTING HYDRAULIC CHARACTERISTICS. THE CLARIFIER WILL BE MODIFIED TO IMPROVE THESE HYDRAULICS AND THE IMPROVEMENTS DOCUMENTED BY ADDITIONAL DYE STUDIES. A THREE-MONTH PARALLEL PERFORMANCE EVALUATION WILL ALSO BE COMPLETED. RESULTS TO DATE: INITIAL DYE STUDIES SHOWED SEVERE SHORT CIRCUITING WITHIN THE CLARIFIER. CLARIFIER MODIFICATIONS HAVE BEEN INSTALLED AND THE PARALLEL PERFORMANCE EVALUATION IS UNDERWAY. INITIAL RESULTS INDICATE A 50% IMPROVEMENT IN EFFLUENT QUALITY FOR THE MODIFIED CLARIFIER OVER THE CONTROL CLARIFIER.

*PROJECT: 004802-KINETIC STUDY OF SIMULATED ATMOSPHERES CONTAINING COMMON SULFUR, NITROGEN, AND CARBON-COMPOUND POLLUTANTS
STARTING/ COMPLETION DATE : 02/79 - 12/81 : FY79
TASK CODE=G603A-AC-051 **EPA=R806479-01 ** (GRANT)

EPA OFFICER.: J BUFALINI EPA/ESRL - RTP 919-541-2422
INVESTIGATOR.: JG CALVERT OHIO STATE UNIV MATH & PHYS SCI/CHEM DEPT
MILESTONES...: 02/80 -ANNUAL REPORT
02/81 -ANNUAL REPORT
12/81 -FINAL REPORT
PROGRAM ID...: (PE-603) HEALTH AND ECOLOGICAL EFFECTS- TRANS. AND FATE POLLUTANTS
MANDATE......: 20-20 AA FOR AIR AND WASTE MANAGEMENT
20-30 AA FOR TOXIC SUBSTANCES
ORDIS CODES..: RECN-004802 SSIE-GMA 5809 EPA -R806479-01 TASK-G603A-AC-051
ORD -RG10B31-2079 MAND-20-20 MAND-20-30
PE -603 LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC
COMMENT......: FY=79,RC=G,AH=RD,PE=760,$00050000
ABSTRACT.....: OBJECTIVE: THE OBJECTIVES OF THIS STUDY ARE: 1. TO STUDY THE HOMOGENEOUS REMOVAL PROCESSES FOR SO2 WITHIN POLLUTED ATMOSPHERES. 2. STUDY THE PHOTOOXIDATION OF ALDEHYDES IN THE ATMOSPHERE; 3. STUDY THE FATE OF NITROGENOUS COMPOUNDS IN THE ATMOSPHERE. APPROACH: THE OXIDATION OF SO2 WILL BE STUDIED WITH OH RADICALS AND WITH HYDROCARBON-NO-SOX REACTIONS. THE ALDEHYDES WILL BE PHOTODISSOCIATED IN A LONG PATH IR CELL AND PRODUCTS WILL BE STUDIED WITH AN FTS SYSTEM. THE NITROSOAMINES WILL BE STUDIED BY REACTING THE AMINE WITH NO, NO2, ALKANES BOTH WITH FTS AND KINETIC FLASH SPECTROSCOPY.

*PROJECT: 001185-THE EFFECTS OF SELECTED ORGANIC CONTAMINANTS IN DRINKING WATER ON THE FUNCTIONS OF THE REPRODUCTIVE, NERVOUS & IMMUNE SYSTEMS (ABB
STARTING/ COMPLETION DATE : 10/76 - 01/81 : FY79
TASK CODE=D823B-012B **EPA=R806481-01 ** (GRANT)

EPA OFFICER.: KI CAMPBELL   EPA/HERL - CINC   513-684-7481
INVESTIGATOR.: JF BORZELLECA   VIRGINIA COMMONWEALTH UNIV   MED COLL OF VA
AE MUNSON   VIRGINIA COMMONWEALTH UNIV   MED COLL OF VA
WL DEWEY   VIRGINIA COMMONWEALTH UNIV   MED COLL OF VA
MILESTONES...: 02/79 -MOST TEST AREAS TO BE CONDUCTED SIMULTANEOUSLY, QUARTERLY REPORTS
01/81 -FINAL REPORT
PROGRAM ID...: (PE-823)   HEALTH EFFECTS
MANDATE......: 10-15   SAFE DRINKING WATER ACT
ORDIS CODES..: RECN-001185   SSIE-GMA 4363 2   EPA -R806481-01   TASK-D823B-012B
ORD -RD10B31-1079   MAND-10-15   PE -823
LABT-OHR

PROJ STATUS..: ACTIVE -MULTIYEAR   CATEGORY-RESEARCH   DATA-UPDATED   UPDATED- JUL-SEP 79
ACCESS-PUBLIC
COMMENT......: FY=79,RC=D,AH=RD,PE=607,$00100000
ABSTRACT.....: OBJECTIVE: THE RESEARCH ACTIVITIES ONGOING AND PROPOSED IN THIS PROJECT ADDRESS THE NEED FOR DETERMINING THE TOXICITIES OF ORGANIC WATER CONTAMINANTS USING A HOLISTIC APPROACH. THE SWISS ALBINO NEONATE AND ADULT, MALE AND FEMALE MOUSE PROVIDE THE MAIN EXPERIMENTAL ANIMAL. IN ADDITION, ATTENTION WILL BE FOCUSED ON EVALUATING THE SENSITIVITY OF SEVERAL SYSTEMS THAT HAVE NOT BEEN ADEQUATELY EVALUATED BY THOSE ENGAGED IN SAFETY EVALUATION PROGRAMS. A MAJOR EFFORT IS AND WILL BE MADE TO DEVELOP IN VITRO ASSAYS THAT WILL PREDICT SUBCHRONIC AND CHRONIC TOXICOLOGICAL BEHAVIOR. THESE STUDIES WILL ALSO PROVIDE INSIGHT INTO TOXICOLOGICAL MECHANISMS.

*PROJECT: 004862-NINTH ANNUAL SYMPOSIUM ON THE ANALYTICAL CHEMISTRY OF POLLUTANTS
STARTING/ COMPLETION DATE : 12/78 - 07/79 : FY79
TASK CODE=K713B-155 **EPA=R806483 ** (GRANT)

EPA OFFICER.: AL ALFORD   EPA/ERL - ATHENS   404-546-3525
INVESTIGATOR.: LB ROGERS   UNIV OF GEORGIA   CHEM DEPT
MILESTONES...: 05/79 -HOLD SYMPOSIUM
07/79 -FINAL REPORT SUMMARIZING SYMPOSIUM
PROGRAM ID...: (PE-713)   CHARAC. AND MEASUREMENT METHODS DEVELOPMENT
FINAL OUTPUT.: REPORT SUMMARIZING SYMPOSIUM
MANDATE......: 10-01   FEDERAL WATER POLLUTION CONTROL ACT
20-11   DAA FOR WATER PLANNING AND STANDARDS
ORDIS CODES..: RECN-004862   SSIE-GMA 5822   EPA -R806483   TASK-K713B-155
ORD -RK10B30-5079   MAND-10-01   MAND-20-11
PE -713   LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE   CATEGORY-RESEARCH   DATA-ORIGINAL   UPDATED- JUL-SEP 79
ACCESS-PUBLIC
ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS TASK IS TO HOLD THE NINTH SYMPOSIUM OF THIS ANNUAL SERIES ON MAY 7-9, 1979. THE SYMPOSIUM IS DESIGNED TO BRING TOGETHER PEOPLE CONCERNED WITH THE APPLICATION OF ANALYTICAL CHEMISTRY TO ENVIRONMENTAL PROBLEMS. APPROACH: APPLIED CHEMISTS WILL LEARN ABOUT THE LATEST DEVELOPMENTS IN A BROAD RANGE OF ANALYTICAL TECHNIQUES. RESEARCHERS WILL MEET AND TALK WITH CHEMISTS WHO WILL APPLY THESE NEWLY DEVELOPED TECHNIQUES. PLENARY LECTURERS WILL REPRESENT DIVERSE VIEWPOINTS CONCERNING IMPLEMENTATION OF THE 1976 TOXIC SUBSTANCES CONTROL ACT. OTHER INVITED SPEAKERS WILL PRESENT A BALANCED, RELEVANT PROGRAM CONCERNING ANALYSIS OF ORGANIC AND INORGANIC ENVIRONMENTAL POLLUTANTS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
EPA GRANTS : PERIOD OCT 1978- MAR 1979
* O R D I S   D A T A   E X T R A C T *

*PROJECT: 004826-ROLE OF ORGANIC PEROXYNITRATES IN PHOTOCHEMICAL SMOG

STARTING/ COMPLETION DATE : 04/79 - 05/82 : FY79
TASK CODE=G832B-EA-171 **EPA=R806506-01 ** (GRANT)

EPA OFFICER..: M DODGE   EPA/ESRL - RTP   919-541-2374
INVESTIGATOR.: DG HENDRY   S R I INTERNATL
MILESTONES...: 05/82 -FINAL REPORT
PROGRAM ID...: (PE-832)   ATMOS TRANS OF ENERGY RELATED POLLUTANTS
MANDATE......: 10-02   CLEAN AIR ACT
ORDIS CODES..: RECN-004826   SSIE-GMA 5784   EPA -R806506-01   TASK-G832B-EA-171
ORD -RG10B31-1079   MAND-10-02   PE -832
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE   CATEGORY-RESEARCH   DATA-ORIGINAL   UPDATED- JUL-SEP 79
ACCESS-PUBLIC
COMMENT......: FY=79,RC=G,AH=RD,PE=603,$00010000
FY=79,RC=G,AH=RD,PE=832,$00050000

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THE PROPOSED STUDY IS TO ELUCIDATE THE ROLE OF ORGANIC PEROXYNITRATES IN PHOTOCHEMICAL SMOG FORMATION. THE DECOMPOSITION OF PEROXYNITRATES, RO2NO2 YIELDS RO2 + NO2, AND THE SUBSEQUENT REACTIONS OF THE PEROXY RADICALS WITH NO AND NO2 WILL BE INVESTIGATED. APPROACH: THE FOLLOWING PEROXYNITRATES WILL BE STUDIED: PPN, PFN, PNA, PEROXYETHYL NITRATE, PEROXY ISOPROPYL NITRATE, PEROXY-T-BUTYL NITRATE, PEROXYPENTYL NITRATE.

U.S. ENVIRONMENTAL PROTECTION AGENCY

Form Approved
OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. *(Do not use this space)*

SSIE

EPA R806-525-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Past and On-Going Research Dealing with Small Wastewater Flows

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

M. Dayne Aldridge, Director, Energy Research Center

NAME AND ADDRESS OF APPLICANT INSTITUTION

West Virginia University
Morgantown, WV 26506

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

West Virginia University proposes to implement, operate and maintain a Small Wastewater Flows Clearinghouse as provided for in the 1977 Clean Water Act. A one-year effort is proposed where eight specific tasks will be accomplished. West Virginia University's commitment to the long-term success of the Clearinghouse is demonstrated by the proposed integration into the West Virginia University Energy Research Center. The Clearinghouse is not only a natural tie to the research effort at West Virginia University, but also to the Energy Research Center's commitment to developing an effective and efficient system of technology transfer.

The Director of the Energy Research Center will work closely with a selected staff of highly-qualified professors with extensive experience in research and training in small waste flows systems in providing overall program leadership and direction. A qualified professional, with scientific/engineering background and managerial experience in technology transfer programs will function as Program Manager.

U.S. ENVIRONMENTAL PROTECTION AGENCY

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OMB No. 158-R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA R806526-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Recovery of Asbestos Fibers from Baboon Tissues

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Dr. William H. Hallenbeck, School of Public Health, Assistant Professor

NAME AND ADDRESS OF APPLICANT INSTITUTION

School of Public Health, University of Illinois at the Medical Center, Chicago
P.O. Box 6998 Chicago, Illinois 60680

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Objective

To test the hypothesis that asbestos fibers can be recovered from selected tissues of a baboon which has been given a known dose of asbestos fibers via stomach tube.

Approach

One control and one test juvenile baboon will be used. The test baboon will be gavaged for 2 weeks with a concentrated suspension of chrysotile and amphibole. At the end of 2 weeks both animals will be sacrificed and the following tissues examined (transmission electron microscopy and electron diffraction) for the presence of asbestos fibers: lung, pleura, peritoneum, colon, stomach, rectum, urinary bladder, pancreas, kidney, brain, heart.

*PROJECT: 004751-REOVIRUSES IN WATER POLLUTION TESTING

STARTING/ COMPLETION DATE : 04/79 - 03/81 : FY79
TASK CODE=D607A-015A **EPA=R806527-01 ** (GRANT)

EPA OFFICER.: EW AKIN EPA/HERL - CINC 513-684-7383
INVESTIGATOR.: RS SPENDLOVE DEPT. OF BIOLOGY UTAH HIGHER EDUCATION SYSTEM
B BARNETT DEPT. OF BIOLOGY UTAH HIGHER EDUCATION SYSTEM
MILESTONES...: 04/80 -PROCED. FOR RECOVERY OF REOVIRUS BOVINE ROTAVIRUS
03/81 -DATA ON THE SUITABILITY OF REOVIRUS IN ENVIRONMENTAL SAMPLES
PROGRAM ID...: (PE-607) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
FINAL OUTPUT.: DATA ON SUITABILITY OF REOVIRUS IN ENVIRON SAMPLES
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
10-15 SAFE DRINKING WATER ACT
ORDIS CODES..: RECN-004751 SSIE-GMA 5773 EPA -R806527-01 TASK-D607A-015A
ORD -RD10830-1079 MAND-10-01 MAND-10-15
PE -607 LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: 1. THE DEVELOPMENT OF A SENSITIVE PROCEDURE FOR CONCENTRATING, ISOLATING AND ASSAYING INFECTIOUS AND POTENTIALLY INFECTIONS (ENZYME ENHANCEABLE) REOVIRUSES AND ROTAVIRUSES FROM RAW SEWAGE, TREATED SEWAGE (EFFLUENTS) AND RAW SLUDGE. 2. DETERMINATION OF THE OCCURRENCE (BY USING THE ABOVE PROCEDURE) OF REOVIRUSES/ROTAVIRUSES IN RAW SEWAGE, SEWAGE EFFLUENTS, SLUDGE AND FEEDLOT RUN OFF. 3. COMPARISON FOR THE OCCURRENCE (CONCENTRATION AND FREQUENCY) OF REOVIRUSES/ROTAVIRUSES WITH THE OCCURRENCE OF HUMAN ENTEROVIRUSES IN SEWAGE AND SLUDGE. APPROACH: THE PROTAMINE SULFATE PRECIPITATION METHOD WILL BE USED (AND MODIFIED) TO CONCENTRATE THE VIRUSES. THE FLUORESCENT ANTIBODY PROCEDURE AND THE PLAQUE ASSAY PROCEDURE WILL BE USED TO COMPARE VARIOUS CELL LINES FOR REOVIRUS AND ROTAVIRUS RECOVERY SENSITIVITY. ENZYME ACTIVATION TECHNIQUES WILL BE USED TO RECOVER POTENTIALLY INFECTIOUS VIRUSES. THE DEVELOPED PROCEDURES WILL THEN BE USED TO EVALUATE THE OCCURRENCE OF THESE VIRUSES IN ENVIRONMENTAL SAMPLES. RESULTS TO DATE: NEW PROJECT: NO RESULTS YET AVAILABLE.

*PROJECT: 004753-STUDIES OF WATERBORNE AGENTS OF VIRAL GASTROENTERITIS

STARTING/ COMPLETION DATE : 02/79 - 02/81 : FY79
TASK CODE=D607A-018A **EPA=R806546-01 ** (GRANT)

EPA OFFICER.: EW AKIN — EPA/HERL - CINC — 513-684-7383
INVESTIGATOR.: R DOLIN — SCHOOL OF MEDICINE — UNIVERSITY OF VERMONT & STATE AGRI
RC REICHMAN — SCHOOL OF MEDICINE — UNIVERSITY OF VERMONT & STATE AGRI
MILESTONES...: 02/80 -RIA & CHARACTERIZATION OF SNOW MT. AGENT OF GASTROENTERITIS
02/81 -CHARACT. OF SNOW MT. AGENT OF WATERBORNE GASTROENTERITIS
PROGRAM ID...: (PE-607) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS
FINAL OUTPUT.: CHARAC OF SNOW MT AGENT OF WATERBORNE GASTORENTERITIS.
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
10-15 SAFE DRINKING WATER ACT
ORDIS CODES..: RECN-004753 SSIE-GMA 5780 EPA -R806546-01 TASK-D607A-018A
ORD -RD10B30-1079 MAND-10-01 MAND-10-15
PE -607 LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THESE INVESTIGATIONS ARE DESIGNED TO DEVELOP TECHNIQUES FOR THE GROWTH AND DETECTION OF WATERBORNE VIRAL AGENTS OF GASTROENTERITIS. THE EVENTUAL GOAL OF THESE INVESTIGATIONS IS TO EVALUATE, AND IF NECESSARY, DEVISE POTENTIAL METHODS OF CONTROL, SUCH AS DECONTAMINATION OF WATER SUPPLIES. APPROACH: KNOWN INFECTIOUS (VIRUS-CONTAINING) STOOL SPECIMENS, ALONG WITH ACUTE AND CONVALESCENT SERA FROM NATURALLY OCCURRING AND EXPERIMENTALLY INDUCED ILLNESS ARE AVAILABLE FOR STUDY. THESE MATERIALS ARE EXAMINES BY IMMUNE ELECTRON MICROSCOPY. IN VITRO ASSAYS SUCH AS IMMUNE ADHERENCE HEMAGGLUTINATION AND RADIOIMMUNOASSAY ARE ALSO BEING DEVELOPED. INTENSIVE EFFORTS TO GROW THESE PREVIOUSLY UNCULTIVATED AGENTS IN VITRO ARE ALSO BEING CARRIED OUT, IN A VARIETY OF HUMAN AND PRIMATE TISSUE AND ORGAN CULTURES.

*PROJECT: 005230-MUTAGENIC TESTING OF INDUSTRIAL WASTES FROM REPRESENTATIVES OF THE ORGANIC CHEMICAL INDUSTRY

STARTING/ COMPLETION DATE : 03/79 - 09/79 : FY79
TASK CODE=L610C-033 **EPA=R806557 ** (GRANT)

EPA OFFICER.: JE MATTHEWS — EPA/ERL - ATHENS — 405-332-8800
INVESTIGATOR.: S STINNETT — EAST CENT OKLA ST UNIV
PROGRAM ID...: (PE-610) MINERALS PROCESSING AND MANUFACTURING INDUSTRIES
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-005230 SSIE-GMA 6159 EPA -R806557 TASK-L610C-033
ORD -RK10B30-1079 MAND-10-01 PE -610
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- OCT-DEC 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: DETERMINE MUTAGENIC CHARACTERISTICS OF RAW AND TREATED WASTEWATERS FROM PLANTS REPRESENTING VARIOUS SEGMENTS OF THE ORGANIC CHEMICAL INDUSTRY. APPROACH: THE AMES PROCEDURE WILL BE USED TO TEST AND COMPARE TREATED AND UNTREATED WASTEWATERS FROM PLANTS REPRESENTING VARIOUS SEGMENTS OF THE ORGANIC CHEMICALS INDUSTRY.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

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OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA X806548-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT A Budget of Man-Made Sulfur, Nitrogen, and Hydrogen ion over the Eastern U. S. and SE Canada Airshed; Status Report by an Interdisciplinary Working Group.

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Professor R. B. Husar, Principle Investigator

NAME AND ADDRESS OF APPLICANT INSTITUTION

Washington University
Lindell & Skinker Blvds.,
St. Louis, Mo. 63130

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of this project is to asses the overall budjet of sulfur, nitrogen, and hydrogen ion originating from air pollution. The amount, chemical composition, and residence time of these compounds in air, land and water will be estimated for the eastern U. S. -SE Canada airshed.

Assessment will be performed by an interdisciplinary working group, consisting of experts in atmospheric processes, terrestrial and biological specialists, and aquatic scientists. The final result will be a report of our understanding of the sources, dispersion, impact and fate of anthropogenic S, N, and H^+ in the environment.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R806549-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Prep. of Proceedings and Non-Technical Summary of SOEH Conference Pesticides & Human Health

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

NAME AND ADDRESS OF APPLICANT INSTITUTION

Society for Occupational and Environmental Health
1341 G Street, NW, Suite 308
Washington, D.C. 20005

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The Society for Occupational and Environmental Health plans to publish the proceedings from their upcoming conference, "Pesticides and Human Health," The conference is designed to both give an overview of the health problems associated with pesticide use and to highlight areas of specific concern for research and regulation.

Special attention will be focused on groups at high risk such as industrial workers, applicators, and farm workers. The conference will be opened with an overview session on pesticide use and pest management. Following that session there will be a critique of the past commission reports on pesticides, including the Mrak report and the more recent National Academy of Sciences report. Current scientific knowledge and current regulatory problems will be discussed with respect to whether the recommendations of these commissions have been implemented.

*PROJECT: 004877-DEVELOPMENT OF STUDY PLAN FOR GARBER-WELLINGTON AQUIFER

STARTING/ COMPLETION DATE : 01/79 - 06/79 : FY79
TASK CODE=L775K-02 **EPA=R806562 ** (GRANT)

EPA OFFICER.: JT THORNHILL EPA/ERL - ADA 405-332-8800 E
INVESTIGATOR.: LW CANTER DEPT. OF CIVIL ENGINEERING UNIVERSITY OF OKLAHOMA
MILESTONES...: 06/79 -FINAL REPORT
PROGRAM ID...: (PE-775) ANTICIPATORY
FINAL OUTPUT.: FINAL REPORT
MANDATE......: 30-99 WATER QUALITY
CURR. RESULTS: ALL AVAILABLE INFORMATION HAS BEEN GATHERED AND NOW BEING COMPILED AND ANALYZED TO DETERMINE EXISTING DATA GAPS.
ORDIS CODES..: RECN-004877 SSIE-GMA 5838 EPA -R806562 TASK-L775K-02
ORD -RL10B30-3079 MAND-30-99 PE -775
LABT-EPE

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS PROJECT IS TO STUDY THE GARBER-WELLINGTON AQUIFER IN CENTRAL OKLAHOMA, SUMMARIZE AND IDENTIFY KNOWN INFORMATION ON THE QUANTITY AND QUALITY OF WATER IN THE AQUIFER, IDENTIFY DATA GAPS AND DEFINE WORK ELEMENTS TO CLOSE THOSE GAPS AND ASSIST IN AQUIFER RESEARCH. APPROACH: ESSENTIALLY A "STATE-OF-KNOWLEDGE" LITERATURE SEARCH ON THE GARBER-WELLINGTON AQUIFER. RESULTS TO DATE: ALL AVAILABLE INFORMATION HAS BEEN GATHERED AND IS NOW BEING COMPILED AND ANALYZED TO DETERMINE EXISTING DATA GAPS.

U.S. ENVIRONMENTAL PROTECTION AGENCY

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PROJECT NO. (Do not use this space)
SSIE
EPA R806565-01

NOTICE OF RESEARCH PROJECT

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

ICHTHYOPLANKTON LOSSES IN WESTERN LAKE ERIE IN 1975-77

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Richard L. Patterson, School of Natural Resources, Professor

NAME AND ADDRESS OF APPLICANT INSTITUTION
University of Michigan
1543 Dana
School of Natural Resources
Ann Arbor, Michigan 48109

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

Summary of Technical Proposal

Impacts on fish populations in western Lake Erie by power plants using open cycle cooling technology is investigated. Data to be used in the study were obtained in larval fish surveys in 1975, 1976, and 1977 by the Michigan Department of Natural Resources and the Ohio Center for Lake Erie Area Research. Estimates are obtained for (a) total numbers of larval fishes entrained in 1975-77, (b) number of equivalent adults lost to the fish populations, and (c) number of equivalent adults lost to the more important fisheries.

*PROJECT: 004720-ASSESSMENT OF SEWER SEALANTS

STARTING/ COMPLETION DATE : 04/79 - 06/80 : FY79
TASK CODE=C822A-S1T074 **EPA=R806567 ** (GRANT)

EPA OFFICER.: RP TRAVER EPA/MERL - CINC 201-321-6677
INVESTIGATOR.: RH SULLIVAN AMERICAN PUBLIC WORKS ASSN
WB THOMPSON NASSCO INC.

MILESTONES...: 07/79 -COMPLETE TASK I: DEVELOPMENT OF PERFORMANCE CRITERIA FOR SEALANTS
09/79 -COMPLETE TASK II: SEALING OF HOUSE LATERALS
11/79 -COMPLETE TASK III: SCREENING OF POSSIBLE SEALANTS
01/80 -COMPLETE TASK IV: RESEARCH AND DEVELOPMENT PROGRAM
06/80 -FINAL REPORT PUBLISHED

PROGRAM ID...: (PE-822) POINT SOURCE TECH DEV (WASTEWATER SYS)
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 URBAN RUNOFF CONTROL

ORDIS CODES..: RECN-004720 SSIE-GMA 5868 EPA -R806567 TASK-C822A-S1T074
ORD -RC10B30-5079 MAND-10-01 MAND-30-99
PE -822 LABT-EET

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-ORIGINAL UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE PROJECT IS DESIGNED TO DEVELOP PERFORMANCE STANDARDS FOR SEWER SEALANTS, IDENTIFY POTENTIAL PRODUCTS WHICH MAY HAVE APPLICATION AND DEVELOP A TESTING AND EVALUATION PROGRAM WHICH MIGHT BE USED BY USEPA TO DETERMINE PRODUCT ACCEPTABILITY. THE WORK PRODUCTS WILL BE SCREENED BY INDUSTRY REPRESENTATIVES FOR INPUT AND FOR SUGGESTIONS OF POSSIBLE CHEMICAL FORMULATIONS. POSSIBLE R&D EFFORTS WHICH MAY BE NEEDED FOR THE SEALING OF HOUSE LATERALS WILL ALSO BE INVESTIGATED. APPROACH: 1) DEVELOP PERFORMANCE CRITERIA BY WHICH PRODUCTS WOULD BE ASSESSED; 2) CONDUCT AN ANALYSIS OF DEVELOPED OR POTENTIAL METHODS FOR THE SEALING OF HOUSE LATERALS; 3) SCREEN AVAILABLE SEALANTS USED FOR NON-SEWER APPLICATION AND IN OTHER COUNTRIES FOR PRODUCTS WHICH WOULD MEET THE PERFORMANCE CRITERIA; AND 4) DEVELOP RECOMMENDATIONS FOR THE DEVELOPMENT OF A TESTING PROGRAM FOR THE IDENTIFIED SEALANTS WHICH APPEAR TO MEET THE PERFORMANCE CRITERIA.

*PROJECT: 001146-DETECTION OF VIRAL GASTROENTERITIS AGENTS

STARTING/ COMPLETION DATE : 05/77 - 06/81 : FY79
TASK CODE=D823B-026A **EPA=R806591-01 ** (GRANT)

EPA OFFICER.: EW AKIN EPA/HERL - CINC 513-684-7383
INVESTIGATOR.: NR BLACKLOW UNIV OF MASSACHUSETTS MED SCH AT WORCESTER
G CUKOR UNIV OF MASSACHUSETTS MED SCH AT WORCESTER
SH CHEESEMAN UNIV OF MASSACHUSETTS MED SCH AT WORCESTER
MILESTONES...: 05/80 -RIA TEST FOR HAWAII AGENT
01/81 -IN VITRO CULTIVATION OF HUMAN ROTAVIRUS AND NORWALK AGENT
01/81 -SEROEPIDEMIOLOGICAL STUDIES OF GASTROENTERITIS OUTBREAKS
06/81 -NEW SERIOLOGICAL TOOLS FOR INVEST. GASTROENTERITIS OUTBREAKS
PROGRAM ID...: (PE-823) HEALTH EFFECTS
FINAL OUTPUT.: NEW SERIOLOGICAL TOOLS DEVELOPED FOR INVESTIGATING
GASTROENTERITIS OUTBREAKS
MANDATE......: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-001146 SSIE-GMA 4354 2 EPA -R806591-01 TASK-D823B-026A
ORD -RD10B30-1079 MAND-10-01 PE -823
LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE CATEGORY-RESEARCH DATA-UPDATED UPDATED- JUL-SEP 79
ACCESS-PUBLIC

ABSTRACT.....: OBJECTIVE: THE MAJOR OBJECTIVE OF THIS PROJECT IS TO ASSESS THE CONTRIBUTION OF VIRUSES TO ENVIRONMENTALLY TRANSMITTED ENTERITIS. APPROACH: THE PROBLEM IS BEING APPROACH IN TWO WAYS. THE FIRST APPROACH IS THE DEVELOPMENT OF NEW AND MORE SENSITIVE METHODS FOR THE DETECTION OF AGENTS IN VIRAL ENTERITIS. THIS INCLUDES ATTEMPTS TO PROPAGATE THE AGENTS IN VITRO, AND IMPROVEMENT OF THE SENSITIVITY OF IMMUNOLOGICAL ASSAYS FOR THESE VIRUSES THAT HAVE ALREADY BEEN DEVELOPED IN OUR LABORATORY. DEVELOPMENT OF NEW IMMUNO-ASSAYS FOR VIRAL AGENTS OF ENTERITIS NOT PREVIOUSLY STUDIED IS ALSO PLANNED. THE SECOND APPROACH IS TO UTILIZE TECHNIQUES PRESENTLY AVAILABLE IN OUR LABORATORY FOR THE STUDY OF NATURALLY OCCURRING DISEASE OUTBREAKS AND FOR PROSPECTIVE SEROEPIDEMIOLOGICAL STUDIES.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R806594-01

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Physicians Seminars on Health Effects of Air Pollution

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Sarah Sproles, Principal Investigator, American Lung Association

Carl M. Shy, M.D., Coprincipal Investigator, American Lung Association

NAME AND ADDRESS OF APPLICANT INSTITUTION

American Lung Association
1740 Broadway
New York, N.Y. 10019

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The American Lung Association and its medical area, the American Thoracic Society, will prepare and conduct a demonstration seminar and three conferences for physicians, on the health effects of air pollution, the provisions of the Clean Air Act, advice and treatment of patients adversely affected by air pollution, and on the contribution of the medical community in attaining healthful air quality.

During the first of two project years, an expert steering committee of American Thoracic Society members will be formed to plan and arrange the demonstration seminar, and afterwards to evaluate the seminar results and prepare the seminar proceedings for publication. Simultaneously, a second expert committee will be formed to develop guidelines for physician advice and treatment of affected patients. These guidelines will be published and presented at the demonstration seminar.

During the second year of the project, three conferences will be held in conjunction with national professional society meetings, at which the successful components of the demonstration seminar will be presented to the physician community. An audiovisual program of tape/slide material will be prepared from these conferences and will be available for distribution to medical schools, medical societies, and affiliates of the American Lung Association. The published proceedings and audio-visual program will address: (1) the health hazards of air pollution, (2) physician advice and treatment of affected patients, (3) major issues of the Clean Air Act of 1977 (4) physician contribution in attaining healthful air quality.

*PROJECT: 004405-FULL-SCALE STUDY OF SEQUENCING BATCH REACTORS

```
                 STARTING/ COMPLETION DATE : 04/79 - 08/81 :   FY79
                 TASK CODE=C822B-03TC13 **EPA=R806598-01  ** (GRANT)
EPA  OFFICER.: EF BARTH               EPA/MERL - CINC                513-684-7641
INVESTIGATOR.: RL IRVINE              UNIV OF NOTRE DAME             SCH OF ENG
               LH KETCHUM             UNIV OF NOTRE DAME             SCH OF ENG
MILESTONES...: 09/79 -NSF USER COMMITTEE MEETING
               12/79 -INITIAL MONITORING OF MODIFIED SYSTEM
               04/80 -EVALUATION OF NITRIFICATION
               10/80 -MICROPROCESSOR EVALUATED
               02/81 -DATA EVALUATION
               08/81 -PUB. OF RESULTS IN ENVIR. PROTECTION TECH. SERIES AND J.W.P.C.F.
PROGRAM ID...: (PE-822 )          POINT SOURCE TECH DEV (WASTEWATER SYS)
FINAL OUTPUT.: PUBLICATION OF RESULTS IN ENV PROTECTION TECHNOLOGY
               SERIES AND JWPCF.
MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: PERSONNEL AND EQUIPMENT BEING ASSEMBLED.
ORDIS CODES..: RECN-004405          SSIE-GMA  5633      EPA -R806598-01      TASK-C822B-03TC13
               ORD -RC10B30-1079    MAND-10-01          PE  -822
                                    LABT-EET

PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH    DATA-ORIGINAL        UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: DETERMINE FEASIBILITY OF USING SEQUENCING BATCH REACTORS AS AN ALTERNATIVE TO CONVENTIONAL CONTINUOUS-FLOW ACTIVATED SLUDGE FOR TREATMENT OF MUNICIPAL WASTEWATER. APPROACH: THE CULVER CITY, INDIANA, TREATMENT PLANT WILL BE MODIFIED FROM CONTINUOUS FLOW TO BATCH TREATMENT. A MICROPROCESSOR WILL BE USED TO CONTROL OPERATIONAL VARIABLES. RESULTS TO DATE: THE PROJECT HAS JUST BEEN FUNDED (APRIL 1, 1979). PERSONNEL AND EQUIPMENT ARE BEING ASSEMBLED.

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U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

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Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

EPA R806633-01

TITLE OF PROJECT Support for Symposia on Biological Effects of Environmental Pollutants: I. Aerosol Generation & Exposure Facilities, II. Health Effects of Nitrogen Oxides

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Klaus Willeke, Ph.D.
Kettering Laboratory
Department of Environmental Health

NAME AND ADDRESS OF APPLICANT INSTITUTION

College of Medicine
University of Cincinnati
Cincinnati, Ohio 45267

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

The objective of these symposia is to summarize and evaluate the state of our knowledge in the fields of

I. Aerosol Generation and Exposure Facilities

II. Health Effects of Nitrogen Oxides

Over 60 scientists from the U.S., Europe and Japan will actively participate in this 4-day program, to be held as part of the Chemical Congress, sponsored by the American Chemical Society and the Chemical Society of Japan, in Honolulu, Hawaii, April 1-6, 1979.

*PROJECT: 004870-THIRD SYMPOSIUM ON AQUATIC POLLUTANTS

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                 STARTING/ COMPLETION DATE : 04/79 - 12/79 :   FY79
                 TASK CODE=K824D-217    **EPA=R806666    ** (GRANT)
EPA  OFFICER.: GL BAUGHMAN              EPA/ERL - ATHENS                    404-546-3145
INVESTIGATOR.: DR BEEM                                                      AMERICAN INST. OF BIOLOGICAL SCIEN
MILESTONES...: 10/79 -HOLD SYMPOSIUM
               12/79 -FINAL REPORT NOT TO BE PUBLISHED
PROGRAM ID...: (PE-824 )          DRINK WATER TREATMENT & GROUND WATER PROT
MANDATE......: 10-01     FEDERAL WATER POLLUTION CONTROL ACT
               10-03     TOXIC SUBSTANCES CONTROL ACT
               10-06     FEDERAL INSECTICIDE, FUNG. AND RODENT. ACT
               10-99
ORDIS CODES..: RECN-004870          SSIE-GMA  5823       EPA -R806666        TASK-K824D-217
               ORD -RK10B30-1079    MAND-10-01           MAND-10-03
               MAND-10-06           MAND-10-99           PE  -824
               LABT-EPE
PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH    DATA-ORIGINAL       UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: A SYMPOSIUM ON THE IDENTIFICATION AND TRANSFORMATION OF AQUATIC POLLUTANTS WILL BE HELD OCTOBER 15-17, 1979 AT JEKYLL ISLAND, GA. THE THEME OF THE MEETING WILL CLOSELY PARALLEL THOSE OF PREVIOUS SUCH CONFERENCES (ATHENS, GA 1974; AMSTERDAM, THE NETHERLANDS, 1977). THESE ARE: A. THE IDENTIFICATION OF AQUATIC POLLUTANTS, INCLUDING TECHNIQUES OF EXTRACTION AND SEPARATION FROM THE AQUATIC ENVIRONMENT AND APPLICATION OF ADVANCED ANALYTICAL INSTRUMENTATION TO THE ANALYSIS OF POLLUTANTS; AND B. THE TRANSFORMATION OF POLLUTANTS TO THE AQUATIC ECOSYSTEM BY MICROBIAL, CHEMICAL, AND PHOTOLYTIC ACTION. APPROACH: APPROXIMATELY 20-25 SPEAKERS WILL PARTICIPATE IN THE TECHNICAL SESSIONS. IN ADDITION TO THE INVITED PAPERS, POSTER SESSIONS WILL ALSO BE CONDUCTED. IT IS ESTIMATED THAT ABOUT 300 SCIENTISTS FROM INDUSTRY, GOVERNMENT, AND ACADEMIA WILL ATTEND THE CONFERENCE. ADEQUATE TIME IS PLANNED FOR AUDIENCE PARTICIPATION AND DISCUSSION WITH THE SPEAKERS.

*PROJECT: 004923-SYMPOSIUM ON HEALTH ASPECTS OF NONIONIZING RADIATION

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                 STARTING/ COMPLETION DATE : 04/79 - 08/79 :   FY79
                 TASK CODE=X817A-001    **EPA=R806710-01  ** (GRANT)
EPA  OFFICER.: G  SIMON                 EPA/OHR- DAA                        202-426-2277
INVESTIGATOR.: ME SHILS                                                     NEW YORK ACADEMY OF SCIENCES
MILESTONES...: 08/79 -PROCEEDINGS
PROGRAM ID...: (PE-817 )          HEALTH EFFECTS/ NON-CRIT POLL
MANDATE......: 20-22     DAA FOR RADIATION PROGRAMS
ORDIS CODES..: RECN-004923          SSIE-GMA  5860       EPA -R806710-01     TASK-X817A-001
               ORD -RX10B30-2079    MAND-20-22           PE  -817
                                    LABT-OHR

PROJ STATUS..: PROJECT-ACTIVE       CATEGORY-RESEARCH    DATA-ORIGINAL       UPDATED-  JUL-SEP 79
                                    ACCESS-PUBLIC
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ABSTRACT.....: OBJECTIVE: PRESENT UP-TO-DATE INFORMATION ON: PHYSICAL ASPECTS OF MICROWAVE RADIATION IN RELATION TO MAN; BIOMEDICAL ASPECTS OF MICROWAVE RADIATION; PUBLIC ISSUES; EPIDEMIOLOGY AND CLINICAL APPLICATIONS. APPROACH: SYMPOSIUM.

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OMB No. 158 R0081

NOTICE OF RESEARCH PROJECT

PROJECT NO. (Do not use this space)
SSIE
EPA 806860

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT
Influence on Nutritional Factors on the Toxicity and Bioconcentration of Chemicals in Fish, with Special Emphasis on Interactions Between Fat Metabolism and Toxic Effects

GIVE NAMES, DEPARTMENTS, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Göran Dave, Ph.D., Dept. of Zoophysiology, Univ. of Göteborg, FACK, 40033 Göteborg, Sweden
James McKim, Ph.D., Environmental Research Laboratory-Duluth, U.S. Environmental Protection Agency, 6201 Congdon Boulevard, Duluth, MN 55804

NAME AND ADDRESS OF APPLICANT INSTITUTION

Environmental Research Laboratory-Duluth, 6201 Congdon Boulevard, Duluth, Minnesota 55804

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress (200 words or less. Omit confidential data). In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

(1) Examine the influence of dietary composition (lipid composition and content) on the toxicity and bioaccumulation of a lipid-soluble toxicant (Endrin) to fathead minnows.

(2) Fathead minnow fry (1 month old) were fed seven diets with different lipid content and composition for three months prior to determination of acute toxicity (96-hr LC50) and bioconcentration (28 day BCF) of Endrin.

Adult fathead minnows were starved for periods of 3, 2, 1, and 0 months prior to determination of acute toxicity (96-hr LC50).

(3) Experiments initiated January 1979 and finished June 1979. Report will be submitted September 1979.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO. *(Do not use this space)*

SSIE

EPA R806864-02-0 ~~R 8 0 0 0 3 0 - 0 8~~

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Toxicity, Bioconcentration and Metabolism of Selected Chemicals in Aquatic Organisms

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

Daniel J. Call, Research Specialist, Center for Lake Superior Environmental Studies
Larry T. Brooke, Research Specialist, Center for Lake Superior Environmental Studies
Raymond J. Kent, Research Specialist, Center for Lake Superior Environmental Studies

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of WisconsinSuperior
1800 Grand Avenue
Superior, WI 54880

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

A study is proposed to provide information for an assessment of (a) the hazard potential of selected organic compounds for freshwater organisms, and (b) the use of aquatic organisms as biological screening tools for contaminants in human drinking water supplies. Specific objectives include: (1) Determine LC_{50} concentrations of test compounds for selected fish and invertebrate species by acute toxicity tests; (2) Estimate "no effect" concentrations of test compounds for selected fish and invertebrate species by embryo-larval or life-cycle toxicity tests; (3) Determine rate of uptake, bioconcentration potential, and rate of elimination of selected compounds in fish tissue; (4) Characterize selected test compound metabolites in fish and invertebrate species.

U.S. ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF RESEARCH PROJECT

(Please read reverse before completing)

Form Approved
OMB No. 158-R0081

PROJECT NO.*(Do not use this space)*

SSIE

EPA

C RR806872-03-0

PREPARED FOR THE SMITHSONIAN SCIENCE INFORMATION EXCHANGE

TITLE OF PROJECT

Mutagenesis and carcinogenesis characterizations of organics in drinking water

GIVE NAMES, DEPARTMENT, AND OFFICIAL TITLES OF PRINCIPAL INVESTIGATORS OR PROJECT DIRECTORS AND ALL OTHER PROFESSIONAL PERSONNEL ENGAGED IN THE PROJECT.

John C. Loper, Ph.D. Professor of Microbiology and Environmental Health, director and co-investigator Dennis R. Lang, Ph.D. Associate Professor of Microbiology
Carl C. Smith, Ph.D. Professor of Environmental Health and Pharmacology, co-investigator
Henryka Kurzepa, Ph.D. Field Service Assistant Professor of Microbiology, co-investigator
M. Wilson Tabor, Ph.D. Assistant Professor of Environmental Health, co-investigator

NAME AND ADDRESS OF APPLICANT INSTITUTION

University of Cincinnati College of Medicine
231 Bethesda Avenue, Cincinnati, Ohio 45267

SUMMARY OF PROPOSED WORK – (1) Objectives, (2) Approach, (3) Current Plans and/or Progress *(200 words or less. Omit confidential data).* In the Smithsonian Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

This program pursues coupled bioassay/chemical fractionation of residue organics from drinking water samples.

1. Salmonella/microsome mutagenicity assay and transformation for focus formation of BALB/3T3 fibroblasts are used in conjunction with experimental HPLC procedures for analysis of a model macrosample of residue organics provided by Dr. Middleton of USEPA.

2. Pre- and post-chlorination drinking water samples will be processed in our laboratory using XAD resin to yield residues for pilot studies on the origin and chemical separation properties of water borne mutagens/carcinogens.

3. The short-term bioassays and fractionation procedures as applicable will be applied to survey samples of organic residues from municipal drinking water provided by USEPA.

4. Research in assay methods will pursue: A, the nature of mutagenesis enhancement genes of Pseudomones aeruginosa; B, further development of a mutagenesis/transformation ratio assay with BALB/3T3 and its use in the assay of promotors; C, studies of latency in tumor development in nude mice following injection of either transformed or normal appearing BALB/3T3 cells; D, mutagenesis and transformation testing of a human male whole embryo fibroblast diploid culture.

*U.S. GOVERNMENT PRINTING OFFICE: 1980 311-132/17 1-3